Integrated Quality Control Sample Designs
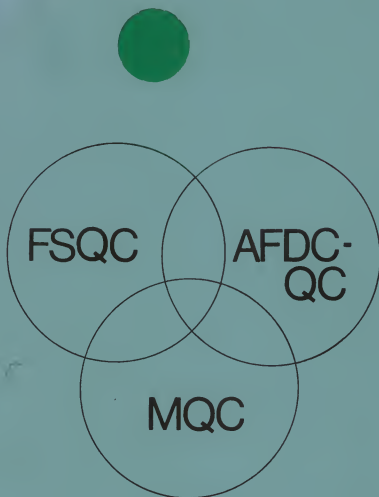National Conference Proceedings   February 14-17, 1978

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
SOCIAL SECURITY ADMINISTRATION
WASHINGTON, D. C.

TO: STATE AGENCIES ADMINISTERING APPROVED AID TO FAMILIES
                   WITH DEPENDENT CHILDREN PLANS

SUBJECT: Publication – Integrated Quality Control Sample
                   Designs: National Conference Proceedings

ATTACHMENT: The attached publication provides a comprehensive
                   overview of the National Conference on Integrated
                   Quality Control Sample Designs which was held in
                   Washington, D.C. on February 14-16, 1978. The
                   Conference was jointly sponsored by the Department
                   of Agriculture and the Department of Health, Education,
                   and Welfare. The expressed purpose of the conference
                   was to provide a forum for the interchange of ideas
                   and experiences concerning integrated QC sample
                   designs.

                   The increased emphasis on monitoring efforts in
                   recent years has lead to expanded sample size and
                   universe requirements in the Food Stamp and Medicaid
                   Quality Control (QC) Systems. As a result, overlap
                   in the populations subject to QC sampling has occurred.
                   Thus a single family may be subject to selection and
                   review under each of the three QC systems. Concern
                   over the cost of such systems as well as the un-
                   necessary imposition on the recipient population
                   has lead to increased interest in the potential
                   that an integrated QC sample design may hold.
                   Through integrated sampling, a family which partici-
                   pates in multiple programs is selected and reviewed
                   simultaneously for each program requiring a Quality
                   Control review.

                   States which have instituted integrated sample designs
                   were invited to make selected presentations on their
                   experiences, i.e., cost effectiveness, impact upon
                   the review process, and sample designs. In addition,

          Social Security Administration
          Office of Management and Administration
          Office of Quality Assurance

technical experts representing the various programs were asked to make presentations on specific aspects of integration. Planning efforts, recent developments in the various QC systems, sample design methods, and the criteria for submission of integrated sample design proposals were discussed in detail. Workshops on sampling techniques and the case review process were also held in order to provide participants with the opportunity for open discussion.

It is anticipated that States will become increasingly interested in sample integration as a mechanism to effect cost savings. Although potential savings do exist, there are statistical, policy, and procedural issues which must be resolved. Each State, however, is in the best position to make its own decision regarding the feasibility and potential benefits of such an approach based on its own particular circum-stances. We trust that the conference and the attached document will assist States in making this decision.

Additional copies of the conference proceedings may be obtained by contacting the Division of Quality Control Management, 330 C Street, S.W., Room 1416, Mary E. Switzer Building, Washington, D.C. 20201.

INQUIRIES TO: SSA Regional Commissioners

Associate Commissioner
for Office of Family Assistance

Section I - Conference Overview

On February 14-16, 1978, the DHEW and the Department
of Agriculture jointly sponsored a national conference
on integrated Quality Control sample designs. In view
of expanding sample requirements upon States and the
potential savings associated with integrated sample
designs, approximately 150 Federal and State employees
were in attendance.

The expressed purpose of the conference was to provide
a forum for the interchange of ideas and experiences
concerning integrated QC sample designs. In the interest
of furthering this purpose, a comprehensive overview of
the conference is being distributed to all interested
parties. It should be noted, however, that some of the
materials may no longer be current and are being presented
for historical reference only.

The Departments wish to express their appreciation to the
presenters and participants for their contribution to the
success of the conference.

Welcoming Remarks and Conference Format

Conference participants were welcomed to Washington, D.C. by the following officials from the sponsoring agencies.

> Barry Van Lare, Associate Commissioner
> Office of Family Assistance
> Social Security Administration
> Coordinator of Welfare Reform for DHEW
>
> Nancy Snyder, Acting Deputy Administrator
> Family Nutrition Program
> Food and Nutrition Service
> Department of Agriculture
>
> Tom Staples, Acting Director
> Family Assistant Studies Staff
> Office of Research and Statistics
> Social Security Administration
>
> Victor Kugajevsky, Acting Deputy Director
> Office of Financial Management
> Medicaid Bureau
> Health Care Financing Administration
>
> John X. Bowes, Director
> Division of AFDC Quality Control Management
> Office of Quality Assurance
> Social Security Administration

The welcoming officials emphasized the need for a continuing focus on program integrity and expressed their support for the conference objectives. It was particularly noted that potential savings can result from integrated Quality Control sample designs and that it offers Federal and State staff the unique opportunity to work closely together in realizing these savings.

Welcoming remarks were followed by a series of presentations designed to provide an overview of specific aspects of sample integration. In addition, conference participants had the opportunity to break up into specialized workshops so that issues of concern could be discussed in greater detail.

Management Summary

Rationale for Integration

States are required to perform Quality Control (QC) reviews in three State operated programs; Aid to Families with Dependent Children (AFDC), Medicaid, and Food Stamp (FS). While these programs are separate, they are quite similar in terms of eligibility standards and QC review methodology. The same family unit may participate in two or more programs at the same time. As of July 1, 1976, the Department of Agriculture increased its sampling requirements to include AFDC as well as non-public assistance households. Also, the Health Care Financing Administration has recently expanded its sample requirements to include AFDC recipients. As a result, overlaps have been created in the sample universes of these three programs and the same family unit may be subject to selection and review under each QC system. Concerns about the costs of such systems and the overlap of populations surveyed have led to increased State interest in the potential savings that an integrated sample design and review process may hold.

Integrated sampling is a technique by which a sample of family units (or cases) which participate in multiple programs is selected and reviewed simultaneously for each program requiring a Quality Control review. Ideally, the largest possible statistically valid sample of multi-participation cases is selected in order to maximize the use of available information. The total number of QC review cases, home visits, and collateral contacts is reduced; resulting in a potential savings to the State in time, travel costs, and program efficiency. However, there are many statistical, policy, and procedural issues associated with sample

integration and each State must make its own decision regarding the possible benefits of integration based on its particular situation. To date, eleven States have approval for integrated sample designs and many more States have expressed interest in this approach.

Potential Cost Savings

Quality Control sample integration does offer the potential for significant cost savings to the States. Montana, for example, realized a savings of 15,000 travel miles in the first six months of its integration of AFDC and Food Stamp QC samples. At a rate of 55 miles per hour, this represented a savings in staff time of 38 working days over the six month period. Actual dollar savings in mileage, meals, and lodging amounted to $3,350; a 29% cost reduction over the previous period.

In addition to savings in travel costs, sample integration results in a reduction in the number of cases which must be reviewed. Integration of the three QC samples (AFDC/FS/Medicaid) currently being tested in West Virginia results in a 49% reduction in the number of required case reviews. Although an integrated case review requires more time to complete, it requires less time than if the two or more integrated reviews were completed separately. Illinois estimated that an integrated AFDC and Food Stamp review required 24% less time to complete than if the two reviews were completed independently. In Rhode Island, reviewer productivity increased from 9.9 reviews to 15.2 reviews per month per reviewer in the second six month period of its AFDC/FS sample integration. Additional cost savings can be realized by stratifying the sample in order to increase the probability of selecting cases with a lower cost per review ratio.

Many variables and particularly the State's own situation effect potential savings. A small or predominately urban State may not achieve the savings in travel costs realized in a geographically large State such as Montana. On the other hand, a large urban State may realize a greater increase in the number of reviews completed per reviewer. Some States, although not integrating their QC samples, have realized a cost savings simply through the use of generic as opposed to specialized QC reviewers.

Impact on the Review Process

Although potential cost savings exist, there are many policy and procedural issues which must be taken into account when considering sample integration. There may be implications for staffing and training in that reviewers must become proficient in two or more eligibility programs as well as the corresponding QC review policies and procedures. This may present special problems to States that have separate program manuals or complex State policies. In addition, reviewers currently must complete a separate and detailed worksheet for each QC program for which a case is being reviewed even though much of the recorded information is the same or similar. States consider this duplication the single most difficult and time consuming aspect of the integrated review process. While several States are experimenting with an integrated worksheet (one which can be used for all QC programs under review), none have been successfully field tested to date.

The fact that the various QC programs are administered separately at the Federal level is also a complicating factor. States must maintain the capacity to reach independent review findings for each of the integrated QC programs so that the different program, case completion, and reporting requirements can be met. Changes in one QC program may have a detrimental

effect upon sample integration if not closely coordinated at the Federal level. Recent changes in Food Stamp legislation will dramatically affect the distribution of program benefits and may require subsequent changes in their FS-QC program. The recent shift in the AFDC-QC review cycle is also likely to cause complications for sample integration should AFDC and Food Stamp sampling periods remain on different review cycles.

However, States experienced in sample integration believe that it does offer practical advantages to the review process. States maintain that in addition to increased productivity, sample integration increase reviewer's interest and upgrades the job function.

Integrated Sample Designs

There are essentially five sample designs available whereby cases selected for one QC sample can also be utilized as part of one or two other QC samples. Each design has its own particular requirements, relative efficiency, advantages, and disadvantages. Several of the methods have stratified sample frames and/or weighting requirements. The alternative methods may range in relative efficiency, i.e., the percentage of reduction in the number of required case reviews, from 24% to 49%. One method randomly selects cases by social security number and produces self-weighting samples without requiring that the program benefits of the cases in the sample universe be known. Another method, the Sequential Random Sample Method, can result in a 49% reduction in the number of required case reviews and does not require stratifying sample frames prior to sampling. It does, however, require that weighting be used in the compilation of QC findings. An Optimum Allocation Method is designed to minimize the variance of error rate estimates and the proportional costs of sample

cases. It has stratified sample frames and weighting requirements. As
sample methodologies become more complex, however, computer capability
may become an important consideration.

A major sampling issue is the objective of sampling requirements.
Current fixed sample size requirements are being questioned in favor of
sampling requirements based on precision, or variability of the estimate.
It was concluded that a greater degree of flexibility and coordination
in sampling requirements among the various agencies is necessary in order
to further facilitate an integrated approach.

Statisticians agreed on the importance of QC sample integrity and cost
savings in integrated QC sample designs. States can elect methods for
self-weighting samples or more complex samples requiring weighted error
rates. The appropriate approach to integrated sampling depends upon State
circumstances and Federal QC sampling requirements.

Criteria for Submission of Integrated QC Sample Design Proposal

Quality Control sample integration involves a variety of statistical,
policy, and procedural problems; many are directly related to the States
own particular situation. As a result, it is felt that each State wishing
to develop an integrated sample design is best qualified to search out
solutions within the frame-work of its own system. Each interested State
must submit its proposal concurrently to the respective Regional Offices
for review. The first and foremost criteria for approval is assurance of
sample integrity and the statistical validity of the sample findings. In
addition, the impact of the integrated sample design upon the case review
process, data analysis, reporting requirements, corrective action process,
organization, cost and staff allocations must be described.

Final approval at the Central Office level is required prior to implementation of the State's sample plan in order to insure uniform statistical standards and design approvability.

Future Trends

Although the various Quality Control systems provide vital data on the management of our welfare programs, they are costly and we need to look at ways of making them as cost effective as possible. It is anticipated that States will become increasingly interested in QC sample integration as a mechanism for more effective resource deployment. In order to facilitate this approach, it is recognized that a greater degree of flexibility and coordination is required at the Federal level. The various Federal agencies must carefully evaluate the impact of sampling and program requirements upon integration. Efforts have been initiated to expedite the approval of State's proposals for integration, as well as coordinate the QC review cycles, and develop integrated worksheets and materials.

The Federal government sees its role as one of joint partnership with the States in the effective administration of the welfare programs, and is committed to providing leadership and technical assistance to States in the development and implementation of cost saving initiatives.

Section II - Technical Presentations

Technical experts representing the various programs
were asked to make presentations that would provide
a background in which specific aspects of QC sample
integration may be viewed. Results of Federal
planning efforts and recent developments in the
various QC programs were discussed along with criteria
for submitting proposals for integrated sample designs.
In addition, presentations were made on the various
types of integrated QC sample designs.

PLANNING EFFORTS IN INTEGRATED QUALITY CONTROL
SAMPLE DESIGNS

By: David Arnaudo, Director
     Income Maintenance Evaluation
     Office of Research and Statistics
     Social Security Administration

Introduction

The Office of Research and Statistics sponsored planning grants to New York, South Dakota, and Montana to examine the feasibility of integrating all three (AFDC, Medicaid, and Food Stamps) Quality Control systems. The objectives were to develop a sampling design which would integrate the samples and coordinate the review procedures of the three QC systems.

Office of Research and Statistics in SSA has, in addition, sponsored a grant to Colorado to demonstrate the operational implementation of an integrated design for the three QC systems.

Focus of Findings

Thus far these grants have called attention to four different areas.

1) There are direct benefits that would result from the integration of QC efforts, as follows:

    a) savings in travel time to and from interviews

    b) savings in total interviewing time

    c) reduction of the number of cases reviewed

    d) possible improvement of quality and timeliness of completed reviews.

2) There are indirect benefits resulting from integrating the QC systems as follows:

    a) the elimination of some forms

b)   automation of evaluation systems

c)   integration of corrective action planning

d)   provision of data on multiple program participation

e)   coordination of Federal activities regarding QC.

3) In considering sample integration, attention or caution must be paid to:

a)   the importance of multi-program training of reviewers

b)   the necessity for accurate and flexible monthly sampling, or the use of appropriate weighting

c)   meeting sampling needs and time demands of the three Federal agencies

d)   rigorous evaluations of methodology, accuracy, and cost benefits

e)   avoiding pitfalls of differing definitions among programs, which may cause duplications

f)   careful interagency cost allocation, such that matchable administrative expenses incurred can be accurately claimed from each program.

4) Federal coordination among the three programs is needed regarding:

a)   timing of regulations issuance

b)   coordinating time frames for sampling and case review

c) uniform definitions (e.g., "household", "case", etc.)

d) flexibility with regard to waivers for further experimentation, to obtain maximum results

e) integration at the policy level.

DEVELOPMENTS IN THE AFDC QC PROGRAM -
IMPLICATIONS FOR INTEGRATION

BY: John X. Bowes, Director
     Division of Quality Control
       Management
     Social Security Administration

We at the Federal level recognize and appreciate the additional burdens being placed on States by the various QC systems. Although these systems provide vital data on the management of our welfare programs, they are also costly systems and we need to look for ways of making them as cost effective as possible. We believe that the many similarities among the QC systems, and the increased overlap in the populations reviewed, provides an excellent opportunity for States to achieve savings through integration. As a word of caution, however, it must be recognized that QC sample integration is a complicated procedure, with many variables which must be taken into consideration before deciding the possible advantages and disadvantages it may hold. Many of these variables are determined by the State's own particular situation and as a result, each State must decide if integration is advantageous to them. We are hopeful that this conference will assist States in reaching this decision. With these few words in mind, I would like to pass along to you some recent developments in the AFDC-QC program which may have implications for sample integration.

Fiscal Incentives

As you are aware, the fiscal incentive provision extracted from House Bill 7200 was recently enacted into law. Under this provision, States reaching a "dollar error rate" of less than 4 per centum may be eligible for a share of the Federal savings. As the law reads, however, the "dollar error rate" would be the composite dollar error rate for active cases (ineligibles, overpayments, and underpayments) and negative cases (erroneous denials and terminations). The current negative QC system does not accommodate dollar error rate findings. To do so would require Quality Control to determine eligibility and payment amounts for negative cases not correctly

denied or terminated for the reason given by the local agency. This
issue remains to be resolved at the present time.

H. R. 7200

H. R. 7200 itself was passed by the House of Representatives on June 14,
1977 and is currently under consideration by the Senate. Although we
believe that some of its provisions would be beneficial to the AFDC-QC
program, the Department also feels that some of the provisions will not
produce useful results and we are attempting to have these changed. In
either event, the major provisions of H. R. 7200 as now constituted are
as follows:

- would put QC into law.

- would establish performance evaluation and corrective action by
  "operating units". We are not sure what is meant by the term
  operating units and whether any increase in sample sizes would
  be necessitated.

- would identify where and by whom cases were handled and the
  dates of completed or due reconsiderations.

- would require States to submit their case review findings no
  later than 60 days following the sample month in which the
  case was selected. Under this requirement, any integrated
  design would have to provide for timely and independent AFDC-QC
  case findings.

- would require Corrective Action reports to be submitted no later
  than 120 days after the close of the review period.

- would require a review of State actions taken to correct individual error cases in the previous six-month period.

- would require a full field investigation in all Federal re-review cases.

- would require that the Federal government complete the QC sample and bill the State twice the cost if a State fails to comply with QC requirements.

- would provide for a greater oversight of the QC system by the Inspector General's office.

Change in QC Review Cycle

Another recent development which has an impact on integrated sample designs is the shift from a calendar to a fiscal year AFDC-QC review cycle. Although this shift puts AFDC-QC on the same cycle as MEQC, it puts AFDC-QC out of phase with FS-QC. We believe having all three QC systems on the same review cycle is essential to integration.

Centralized QC Data Base

A major initiative that we are undertaking at the Federal level is the establishment of a centralized QC data base. We believe that such a data base is essential to our goal of increased technical assistance to the States in the determination of the principal causes of errors and in the development of error reduction programs. Our plans call for processing State data through error prone profile systems and supplying the States with this analysis. To this end the Department is planning to propose a regulation which would require States to submit QC case review findings no

later than 60 days following the sample month. In addition to insuring
the timeliness and consistency of State data, the proposed regulation would
eliminate all statistical reporting tables now required from the States.
Instead, the Federal government would have the capacity to generate the
required statistical tables as well as error identification and reduction
goals, error prone profiles, and other management reports for the States.

Re-evaluation of the QC Sample Design

The last major development in the AFDC-QC program in process is a re-exami-
nation of the QC sample design. We are considering replacing the current
step approach of establishing required State sample sizes with a formula
approach. This method would be directly related to each State's actual
caseload and would eliminate the abrupt changes in QC workloads as sample
sizes increase from one step to the next under the current system. Nationally,
we estimate that a reduction of approximately 4,450 required active review
completions can be realized under the new method.

In summary, I would like to say that the Department sees its role as one
of joint partnership with the States in the effective administration of
the AFDC Program. We realize that a greater degree of coordination among
the various Federal Agencies must take place if such efforts as QC sample
integration are to be facilitated. The Department is committed to assisting
States where it can and we trust that this conference is a step in that
direction. Thank You.

DEVELOPMENT IN THE FS-QC PROGRAM -
IMPLICATIONS FOR INTEGRATION

By: Carolyn Merk, Acting Director
     Program Development Division
     Department of Agriculture

I am going to talk to you this morning about some past history of the Food Stamp Program, much of it only very recently past, and about new directions being taken in food stamps that will affect dramatically the distribution of program benefits, in terms of who is eligible and for how much, as well as the process through which benefits are distributed. These factors are, of course, the core of our mutual concern, which is the measurement and documentation of the extent to which program benefits are distributed, in the correct amounts, as intended by legislation and regulation, to the appropriate households.

We in the Department of Agriculture are currently planning for the implementation of new food stamp legislation, legislation that is labeled "reform". Reform has been a popular term to use with regard to our welfare programs for over ten years now, and, usually, it is brought up when a program or programs that frequently experienced considerable popularity during their early years--programs that carry an entitlement of some subset of the population to the tax dollars of others within the population--grow to the point at which either their costs, the number of recipients, or both, begin to claim large amounts of tax dollars or to cover perhaps disturbingly large numbers of people.

To a major extent, the quality control initiatives in welfare programs have been brought about in response to the same phenomena as reform initiatives, that is, large numbers of dollars going to large numbers of people through a complex system. And, in any situation of this

kind, things are going to go wrong sometime, and money will be wrongly spent. The occurrence of mistakes and the resulting waste, almost regardless of how infrequent or small, can result in the undermining of the entire system. Therefore, it is important to accurately measure and interpret systematic errors so that appropriate corrections can be made.

In the mid-1960's, HEW started development of a system which used modern industrial quality control principles to measure the quality of the welfare delivery system. Later, with the vast growth in costs and caseloads under the Food Stamp Program, USDA began to adapt HEW's system for AFDC to its own program. The food stamp program regulations now require a quality control system in each State. The system is an ongoing statistically valid review of participating households: to validate the accuracy of the household's eligibility, to determine the extent to which households are paying the proper purchase requirements and receiving the coupon allotments and therefore the benefits to which they are entitled, and to insure that decisions to deny or terminate a household's participation are valid.

At first, the food stamp quality control system covered only non-assistance households--that is, those households in which no member received welfare, or only some, but not all members, received welfare. Public assistance households--those in which all members are receiving welfare--were not covered by QC at first, partly because it was believed that HEW could cover these cases through their own AFDC quality control system. This made a lot of sense at

the beginning of food stamp's quality control because welfare households were categorically eligible for food stamps; that is, if all household members were included in the grant, the household did not have to meet the food stamp income and asset tests.

However, as the food stamp program grew larger and more complex, as States became more experienced in the food stamp quality control process, and the elimination of categorical eligibility for AFDC and SSI recipients became more of an issue in food stamps, it became necessary to start including public assistance cases in food stamp quality control reviews. This meant, of course, that some households were included twice in quality control reviews--for HEW and for USDA. This is the point at which integrated sampling has come into our individual quality control systems. Where the HEW and USDA sampling universes overlap, samples may be drawn simultaneously, and even personal interviews may, in some situations, be conducted for both programs at the same time. For those of you interested in integrated sampling in these programs, it would be helpful for you to know how the recent food stamp changes will affect the kinds of things that QC reviews must cover as well as our best estimates of how the "error proneness" of the food stamp caseload will change.

As you've probably read in the newspapers, President Carter signed the Food Stamp Act of 1977 into law on September 29, 1977. In many ways, these are the most sweeping changes to the Food Stamp Act since its inception in 1964 when we received our mandate to operate as a full-fledged Federal program--not just a pilot program.

Probably the most important, and certainly the most controversial
change of the new legislation is the elimination of the food stamp
purchase requirement. At the present time, participants must pay for
their stamps, an amount that varies by their countable income and
family size. Countable income is gross monthly income after a long
series of deductible expenses are subtracted. It is in the income
determination and the deduction determination process where many
food stamp errors are made, and the new legislation centers on these
·factors.

The new food stamp legislation will simplify the income and deduction
determination process because it replaces a series of eight allowable
deductions with only three. Under current rules, a caseworker must
compute, and a quality control worker must verify, a work allowance
deduction; mandatory deductions from earned income such as local,
State or Federal income tax withholding payments, Social Security
taxes, mandatory retirement payments, and mandatory union dues; a
medical expense deduction; a child care deduction for workers; a
tuition and mandatory school fees deductions; a court order support
and alimony payments deduction; unusual expense or casualty losses
deduction; and a shelter cost deduction.

These deductions can be very difficult for a quality control worker
to verify. For example, in the medical expense deduction, the reviewer
may have to verify the amount of health and hospitalization insurance
premiums paid, including medicare payments. He may also have to
verify the amount spent for prescribed drugs, the existence and neces-
sity of prosthetic devices or even a seeing-eye dog in the household
and costs associated with it. Then the reviewer must be sure to learn

whether or not any of the medical expenses paid out have been reimbursed through insurance. And the reimbursement must then be put in the proper place on the quality control form as a lump sum payment.

Under our new legislation, there will be only three deductions--a standard deduction of $60 a month for each household, a 20 percent of earned income deduction for households with earnings, and a combined shelter/child-care deduction with a maximum of $75.

This change should lead to fewer errors in the food stamp certification process as well as simplify the work of the average State quality control reviewer.

I mentioned before that the purchase requirement would be eliminated under our new legislation. This does not mean, as reported in some newspapers, that food stamp recipients will simply get the same amount of stamps they get now--but without paying for them. What it means is they will continue to receive the bonus--the same amount that is supplied now by the Federal Government, and they will no longer have to turn over to the Government a portion of their own money to be converted into food stamps. This may also simplify the certification and quality control processes, but it is too early to tell.

There is another change in our new legislation which should simplify our quality control process. Households will no longer have to have access to cooking facilities, nor constitute the difficult to verify "economic unit" thereby eliminating another source of quality control errors.

The final important change impacting on quality control is, as I mentioned before, the elimination of the provision for allowing public assistance households to be categorically eligible for food stamps without meeting an income and an asset test. Thus, some households who are receiving AFDC and SSI now will no longer be eligible for food stamps.

Why were these changes made in the income formula of the Food Stamp Program? It wasn't only to simplify the quality control process, although we hope that may be a result. The new law accomplishes the redistribution of Program benefits from the not so poor to the poorest of the poor. We had discovered that a very unfortunate result of our previous system of allowing the eight allowable deductions was that higher income households were qualifying for Program benefits because they could afford the kind of expenses that qualified as deductions, while other households with the same incomes and compelling expenses, which didn't happen to meet our deduction requirements, were being denied the benefits of the Program. That is why the new legislation did away with the itemized deductions and replaced them with the standard and other two deductions and replaced the variable benefit reduction rate of the basis of issuance tables with a uniform rate applying equitably to all households. Another important change which accomplished the limitations of Program benefits to the poorest households was the establishment of the net income eligibility limits for the program at the OMB poverty level, currently $5,850 a year for a four-person household.

Finally, the food stamp asset test was broadened for the first time to allow households to retain $1,750 in liquid assets, rather than only $1,500 as most of them are allowed now.

The law also contains some interesting funding provisions of particular interest to you as State officials, although it is unknown yet exactly how these provisions will affect quality control. One provision involves sanctions. Federal funds for administrative costs will be withheld from States failing to meet program standards without good cause. A State may be required to pay for food stamps improperly issued if the State has been negligent or has committed fraud. USDA will no longer have to establish a gross negligence charge before billing a State.

Another important funding provision involves incentives. The Federal Government will pay an additional 10 percent of States' administrative costs if they reduce their overall bonus dollar error rates to below five percent. In addition, these States will not have to submit corrective action plans relating to error rates. And the final new and interesting funding provision involves fraud. The new law increases Federal reimbursements to States from 50 percent to a minimum of 75 percent of costs incurred in investigating and prosecuting fraud. People found guilty of fraud by an administrative hearing will be dropped from the Program for 3 months. People found guilty by the courts will be dropped from 6 to 24 months.

With all of these changes, what kind of people can we expect to be participating in the Food Stamp Program once the new legislation is implemented? What can you expect as quality control officials? First, the size of the participating caseload will increase--from an estimated 5.4 million households projected for the current program in FY 1978 to an estimated 6.1 million households once the new legislation is fully implemented. At the same time, the size of the potentially eligible universe will decline. About half of the current caseload--47.3 percent--should expect no change in their food stamp bonus as a result of the new legislation. Nearly a quarter of the current caseload--24.2 percent--will have their bonus increased under the new legislation. The households with increased bonuses are primarily those who have deductions so small now that they will bene-fit from the $60 standard deduction. About one-fifth of the current caseload will remain eligible for Program benefits, but because they currently are taking high deductions, they will have their bonuses reduced under the new legislation. Finally, nearly a tenth of the current caseload will become ineligible because their net incomes will exceed the poverty line. Thus, the people who will be losing program benefits are primarily the high income, high deduction people--those who are prone to quality control errors.

We can only speculate on the estimated 3 million people who will enter the Program for the first time because of the elimination of the purchase requirement. We think they will be households with earned income, because we estimate that most of the households who receive some form of welfare income are already participating at

fairly high rates. We have estimated further that most of these households with earned income are larger than average households-- because our experience indicates that households with earners are usually households with a male head, which generally means at least one additional person per households. Unfortunately, these kinds of households may be more error prone. But at the same time, they usually are _not_ eligible for larger than average bonuses because of their earned income.

Then, there are about 600,000 households who will enter the Program because of the increased asset screen. They may well be elderly, stable income households, because we know that the elderly have more liquid assets than younger households.

In sum there will be many interesting changes taking place in the food stamp caseload and in the quality control system as a result of our new legislation. The job for food stamp quality control reviewers should in many ways be easier because the new law has done much to make the program simplier to understand and administer. However, we in the Department of Agriculture still have some very important decisions to make about quality control in the coming weeks. While I wish I could share more specific QC plans with you, I cannot, primarily because we have no firm plans yet. In fact, we are still drafting portions of the regulations that the QC system will cover, and then, of course, the draft regulations will be made available for public comment before final publication.

However, I can say that our commitment to pursuing integrated sampling is strong, our commitment to an efficient and rational system is strong, and, simultaneously, we are committed to ensuring that the objectives of the new legislation are met.

DEVELOPMENTS IN THE MEQC PROGRAM —
IMPLICATIONS FOR INTEGRATION

By: Allan Lazar, Acting Chief
     Management Performance
        and Statistical Analysis Branch
     Office of Financial Management
     Health Care Financing Administration

As most of you are aware, the Health Care Financing Administration is currently in the process of implementing a major redesign of the Medicaid Quality Control (MQC) system. We believe that the new MQC system, to be effective April 1, 1978, will correct the major deficiencies of the previous system and more importantly for the purposes of this conference, have an important influence upon States interest in integrated sample designs as a management alternative. Under the redesign, the MQC sample universe has been expanded to include the total Medicaid population and although efforts have been made to minimize State QC staff requirements, sample sizes will increase.

Most important to integrated sample designs, however, is the switch in sampling from paid claims to sampling from the case eligibility files; just as in AFDC and Food Stamp QC. Prior to this switch MQC did not readily lend itself to sample integration because Medicaid's sample frame of paid claims was inconsistent with AFDC and Food Stamp's case sample selection. Cases selected from paid claims were reviewed in relation to the time frame in which the service was provided. The review date did not correspond, and may have been up to nine months prior to the selection date. Now, however, the case file universe will be sampled for each QC system and cases will be reviewed for eligibility as of the sample month. As a result, any case selected in a 3-way (AFDC/MQC/FSQC) integrated sample can be simultaniously reviewed for each program benefit being received and more than ever before, interested States have the opportunity to realize the full potential savings associated with integrated sample designs.

I would now like to provide you with a brief overview of the revised Medicaid Quality Control System. The past problems and deficiencies will be outlined as well as the key revisions in sampling and review requirements. Although we realize that there will be difficult times ahead, we believe that the revised MQC system will provide States with the type of data necessary to take meaningful and effective corrective actions. An overview of the key points are to be found on the pages follow.)

. Problem I - Defective Medicaic Program

    - imprecise error estimates

    - difficult to check eligibility

    - outdated error findings

    - partial coverage

. Problem II - Big Dollar Losses (FY'77 est.)

    - $1.2 billion misspent on ineligibles

    - $600 million plus on unrecovered third party insurance (TPL)

    - $200 million on claims processing (CP) errors

. Problem III - No adequate measurement system

    - Old QC faulty

    - nothing for TPL, CP errors

    - "flying blind"

Revised Medicaid QC Program

- Broaden sample to total Medicaid population

- Switch to current month case sampling

- Add TPL, CP review

Benefits

- Measure true level of errors, dollar loss

    - Ineligibility

    - TPL

    - CP

- More accurate, current data on error causes

- Better basis for effective Corrective Action

- Compatible with AFDC, SSI, FS QC

REVISED MEDICAID QC

. Claims to case sampling

. Coverage of total Medicaid Population

. Addition of TPL and Claims Processing error measurement

. Integration with AFDC-QC, SSI-QA

. Implementation Scheduled April 1, 1978

. 125 Positions for QC and TA

REVISED MEDICAID QUALITY CONTROL (MQC) SAMPLE

Medicaid Beneficiaries

```
┌─────────────────┐                                              ┌─────────────────┐
│ AFDC-QC Sample  │                                              │ SSI-QA Sample   │
│ 43,000          │                                              │ 17,000 cases    │
└─────────────────┘                                              └─────────────────┘

        ┌──────────┬──────────────────┬──────────────┐
        │ AFDC Bene-│ Medically Needy  │ SSI Bene-    │
        │ ficiaries │ ┌──────────────┐ │ ficiaries    │
        │           │ │Current Medicaid│ │              │
        │           │ │QC Sample     │ │              │
        │           │ │17,500 Cases  │ │              │
        │           │ └──────────────┘ │              │
        └──────────┴──────────────────┴──────────────┘

        ┌──────────┬──────────────────┬──────────────┐
        │ AFDC     │ Medically Needy  │ SSI          │
        │          │ ┌──────────────┐ │              │
        │          │ │Revised Medicaid QC Sample    │
        │          │ │77,500 Cases  │ │              │
        │          │ └──────────────┘ │              │
        └──────────┴──────────────────┴──────────────┘
```
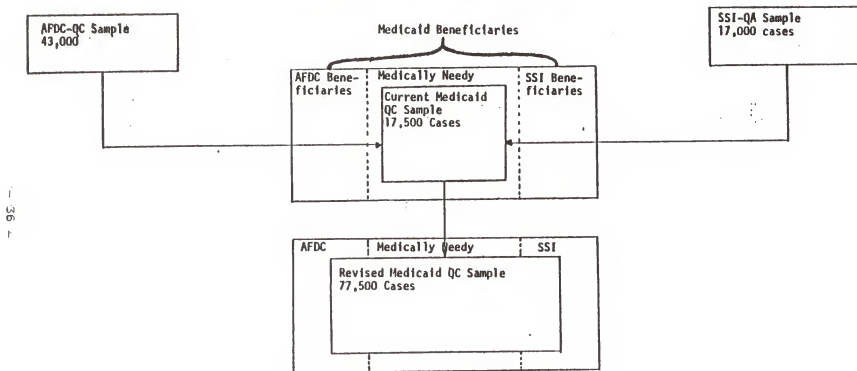
┌──┐
│ Revised MQC Sample = 77,500 (MEQC 17,500 + AFDC 43,000 + SSI 17,000).   │
│   │
│ Operation   = will be implemented April-September '78   │
│ Features   = QC coverage of total Medicaid population; avoids   │
│   duplicative QC reviews; minimizes State QC staff   │
│   requirements.   │
└──┘

INTEGRATED SAMPLE DESIGN METHODS

By: Robert Schneider
     Private Consultant

HOW TO DO IT

INTEGRATED SAMPLE SELECTION
FOR AFDC, FOOD STAMP, AND
MEDICAID QUALITY CONTROL

PREFACE

In each state there is a single agency responsible
for the administration of the AFDC program, the Food
Stamp program and the Medicaid program. These agencies
are required by the Federal Government to operate a quality
control system for each of the three programs. The purpose
of the quality control systems is to measure and reduce the
frequency of benefit errors, which are benefits disbursed
to or for ineligible recipients or incorrect benefit amounts
for eligible recipients.

The three quality control systems have many similarities.
Each is based on a monthly random sample of program benefits
(AFDC payments, Food Stamps, or medical bills paid). The QC
sample cases are investigated very thoroughly to determine
the eligibility of the recipient and the correctness of the
benefit amount. The QC review also collects information
about the causes of any errors found. This information is
used for corrective action planning to eliminate the causes of
benefit errors.

In the past, the three QC systems have been operated
pretty independently. Each system had its own sample
(unrelated to the other system samples) and when a case was
reviewed, only the benefit which caused the case to be selected
was reviewed even though the same individuals might have also
been receiving benefits from another program. In some states,
individual QC reviewers conducted only one type of review
(AFDC, Food Stamp or Medicaid).

Until recently, this was a reasonable approach, since there was not much overlap in the universes sampled from for the three QC systems. Until July 1976, AFDC cases receiving food stamps were excluded from the Food Stamp quality control system. Thus, there was no overlap in the universes sampled from for the AFDC and Food Stamp quality control systems. The Food Stamp QC system has now been expanded to include AFDC cases receiving Food Stamps. The Medicaid Eligibility QC system has not, but is now being modified to include AFDC cases (as well as some other types of cases which were previously excluded, e.g. SSI cases). The MEQC system is also being modified to use a sample of eligible cases rather than a sample of paid claims. Figure 1 shows the relationship which will exist between the universes for the three QC systems.
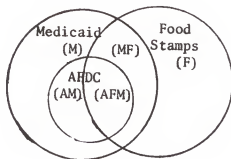

Figure 1. Overlapping universes for AFDC, Food Stamp, and Medicaid QC.

Many families receive more than one of the benefits being considered here. There would be a considerable degree of efficiency involved if one family could be included in more than one QC sample. There would be only one home visit and travel is a significant cost in QC. Many of the items (e.g. assets and income) which have to be verified pertain to all three programs. For these reasons, and other reasons discussed later, the cost of doing two reviews in one case is significantly less than the cost of doing two reviews in two different cases.

The term integrated sampling has been adopted to describe various methods whereby cases selected for one QC sample can also be utilized as part of one (or two) of the other QC samples. Several different approaches are described in this guide. The differences among the various approaches are in

1) The conditions required (e.g. some approaches require that the benefit combination in each case must be known while the sample is being selected. The other approaches do not require that the benefit combination be known at the time of sample selection).

2) The end result (some approaches produce self-weighting samples while the other approaches produce stratified samples which must be combined with weighting factors).

3) The relative efficiency (some approaches are less efficient because less multiple benefit cases are selected or not all of the benefits are reviewed in some of the multiple benefit cases).

For the full potential efficiencies of integrated sampling to be realized, QC reviewers must be able to complete any type of QC review. There are economies involved in having generalized, or generic, QC reviewers even if integrated sample selection is not used. Since generic reviewers can perform more functions, each can be assigned to a smaller geographical area which reduces the total time and money spent travelling. Also, having cases to be reviewed located closer together reduces time spent waiting if time that would otherwise be spent waiting on a case can be used to do something on another case.

Information from states that have trained specialized reviewers to be generic indicates that this is not overly difficult to do and does not result in any reduction in the quality of reviews. What is involved is about a weeks worth of training and some extra supervision for the following couple of months. More information on the integrated review process and the economies involved is contained in An Evaluation of Integrated Sample Selection for AFDC and Food Stamp Quality Control. The conclusion reached there is that the percentage reduction in QC review costs that can be achieved with generic reviewers and integrated sample selection is at lease as large as the percentage reduction in the number of distinct cases to be reviewed. The reason for this is that the extra work in multiple benefit reviews is more than offset by the other economies involved in having generic reviewers.

With some of the integrated sampling procedures described later, the number of distinct cases to be reviewed can be reduced by about 50%, compared to the number of cases that would have to be reviewed if completely independent samples were used for AFDC, Medicaid, and Food Stamp Quality Control.

Since 50% of the QC active case review costs is a large amount of money on a national basis, it appears that integrated sample selection should be pursued wherever possible in spite of the additional complications involved.

INTEGRATED SAMPLE SELECTION

FOR MEDICAID AND OTHER

QUALITY CONTROL SYSTEMS

I. INTRODUCTION

The expanded Medicaid Quality Control system is designed to provide much more useful information than the previous MEQC system, which used relatively small samples compared to other QC systems and covered only part of the total population of Medicaid recipients. The expanded Medicaid QC sample sizes are several times as large as the previous MEQC sample sizes in most states. However, by integrating the Medicaid quality control sample selection with samples from other QC systems, the expanded Medicaid QC system can be implemented with only a small increase or even a decrease in the total QC workload in a state.

Two approaches can be used in selecting the Medicaid quality control sample cases. One approach is to use all of the AFDC quality control cases, all of the SSI quality assurance cases, and an additional sample of Medical Only cases (the same number that were selected in the previous MEQC system). With this approach there is a small increase in the number of field investigations (those required to determine if ineligible SSI cases would still be eligible for Medicaid).

The other approach is to integrate Medicaid QC sample selection with QC sample selection for AFDC quality control and Food Stamp quality control. The primary advantage of this approach is that the increased Medicaid QC sample sizes can be obtained and a significant reduction in the total QC workload can be realized at the same time.

There are many different sampling procedures which could be used to obtain integrated samples for Medicaid, AFDC, and Food Stamp Quality Control. Five methods are described here. All of these methods are discussed in more detail elsewhere. The purpose of this summary is to provide a general description of each method and some discussion of the complications involved and the relative efficiency of each method. With this information, a state can assess its situation and determine which of the methods would be most appropriate.

II.   REPLACEMENT METHOD A

A. History and References

This is the method which has been suggested for integrating Medicaid QC sample selection with AFDC quality control and SSI quality assurance sample cases. This method has been previously used in at least one state, Illinois, to integrate AFDC and Food Stamp QC sample selection. Replacement Method A is a combination of these two methodologies. Additional information on this method is contained in the revised Medicaid QC sampling manual and An Evaluation of Integrated Sample Selection for AFDC and Food Stamp Quality Control.

B. Sampling Procedure

1) Obtain the AFDC quality control sample in the same way this was done with independent sample selection. In addition to the AFDC quality control review, all of these cases will be included in the Medicaid QC sample. All of these cases which receive food stamps (N_{af}) will also be included in the food stamp QC sample.

2) Obtain the remaining number of food stamp QC cases ($N_f - N_{af}$) from the non-AFDC portion of the food stamp caseload. N_f is the total number of food stamp QC cases needed.

3) Include all SSI quality assurance cases in the Medicaid QC sample.

4) Obtain the additional Medicaid QC sample cases needed from the portion of the Medicaid eligibility file not covered in steps 1 or 3. The number needed is specified for each state in the table of Medicaid QC sample sizes.

C. Frame Requirements

For this method to be implemented, the following conditions must be met.

1) It must be possible to identify (at the time of sample selection) those AFDC quality control sample cases which also receive food stamps.

2) The frame used to select the food stamp QC sample cases must specify which are AFDC cases and which are non-AFDC cases.

3) The frame used to select Medicaid cases must specify which cases are AFDC, which cases are SSI and which cases are neither of these.

D. Weighting Required

This method results in the following weighting requirements

1) No weighting if required in the compilation of AFDC quality control findings.

2) Weighting is required in the compilation of Medicaid and Food Stamp quality control findings.

E. Relative Efficiency

The exact amount of reduction in QC workloads which will result from integrated sample selection will vary from state to state due to differences in the amount of overlap in the three caseloads. The information on relative efficiency which follows is based on caseload data from one state (West Virginia) from which information on caseload overlap was available. In West Virginia, the required QC sample sizes

are 550 for AFDC quality control, 1200 for Food Stamp quality
control, and 925 for Medicaid quality control. If no integrated
sample selection were used there would be 550 + 1200 + 925 =
2675 distinct cases to be reviewed. Integrating the Medicaid
quality control sample selection with AFDC quality control and
SSI quality assurance results in a decrease of 550 (or 21%)
in the number of distinct cases and a reduction of about 750
(or 28%) in the number of distinct cases with field investigations,
since most of the 200 SSI quality assurance cases would not
require a field investigation for Medicaid quality control.
Since about 70% of the AFDC cases in West Virginia obtain Food
Stamps, Replacement Method A would produce about .70 x 550 = 385
Food Stamp reviews from the AFDC quality control sample. This
is an additional 14% reduction in the number of distinct cases
(all with field investigations). The time saved in this way
should more than compensate for the additional time required
by other aspects of the expanded Medicaid QC sample (claims
review and third party liability review). Thus, with Replacement
Method A, a state should be able to implement the expanded
Medicaid QC system without adding any additional QC staff.

III. REPLACEMENT METHOD B

A. History and References

This method is very similar to Replacement Method A except that it produces self weighting samples for all of the QC systems. It is not quite as efficient as Method A, but if a state is shorter on data analysis resources than review staff, this method would be preferable to Method A.

Replacement Method B has been used in many states to integrate sample selection for AFDC and Food Stamp Quality Control. It is described in An Evaluation of Integrated Sample Selection for AFDC and Food Stamp Quality Control.

B. Sampling Procedure

1) Obtain the AFDC quality control sample in the same way this was done with independent sample selection.

2) Obtain a stratified sample of food stamp cases (stratified according to AFDC/non-AFDC).

3) Replace all AFDC Food Stamp cases in sample 2 with the same number of AFDC Food Stamp cases from sample 1 (these must be a random subsample of sample 1).

4) Obtain a stratified sample of cases from the Medicaid eligibility file (stratified according to AFDC, SSI, other).

5) Replace all AFDC cases in sample 4 with a random sub-sample of equal size from sample 1.

6) Replace all SSI cases in sample 4 with a random sub-sample of the same size from the SSI quality assurance sample.

C. Frame Requirements

The frame requirements for Replacement Method B are the same as for Replacement Method A, i.e., that in effect the frames used to select each sample must contain some information about other benefits in the case. This condition is not met in many states and was a barrier to integrated sample selection in those states until other methods were developed. The methods described in the following two sections do not require that the benefit combination in cases be indicated in the frames.

D. Weighting Required

Replacement Method B produces self weighting samples for all three QC systems.

E. Relative Efficiency

Replacement Method B would produce the following types of cases for QC review in the example state.

Type of Case		AFDC Reviews	Medicaid Reviews	Food Stamp Reviews
Non-AFDC Food Stamp Cases	840	0	0	840
AFDC Food Stamp Cases	385	385	199	360
Non-Food Stamp AFDC Cases	165	165	85	
SSI Cases	547		547	
Other Medicaid Cases	94		94	
TOTAL	2031	550	925	1200

The 2031 cases to be reviewed is a 24% reduction in cases to be reviewed compared to independent sample selection. This is not as good as the 35% reduction with Replacement Method A. However, the percent reduction in cases with field investigations is greater with Method B (30%) than with Method A (28%). Using independent sample selection there would be 1200 + 550 + 378 = 2128 cases with field investigations. With Method B there are 2031 - 547 = 1484 cases with field investigations. With Method A there are 1540 (56 more) cases with field investigations.

IV. SOCIAL SECURITY NUMBER METHOD

A. History and References

This method was first used by the South Dakota Department of Social Services to integrate sample selection for AFDC and Food Stamp quality control. This method is of special interest because it is the only method (of the five) which produces self weighting samples without requiring that the benefit combination of cases be indicated in the sampling frames.

B. Sampling Procedure

An IBM software package called RANDU is used to generate a pre-specified number of 4 digit random numbers. The number of random numbers needed to select the AFDC quality control sample may be different from the number of random numbers needed to select the Food Stamp or Medicaid quality control samples. Let R_a, R_f, and R_m be the respective numbers of random numbers used for the three samples.

The AFDC quality control sample is obtained by comparing the last four digits of the Social Security number of the payee in each AFDC case to all R_a random numbers being used to select the AFDC quality control sample. If there is a match, the case is selected to be included in the AFDC quality control sample. The probability of selection for any AFDC case is $R_a/10,000$. R_a is determined as follows.

$$R_a = \left(\frac{\text{Average Monthly Sample Size}}{\text{Estimated Average Caseload Size}} \right) \times 10,000$$

If the estimated average AFDC caseload size is 21,000 and the average monthly sample size is $550/6 = 92$, then

$$R_a = \frac{92 \times 10,000}{21,000} = 44$$

The Food Stamp quality control sample is selected in the same way, using the Social Security number of the Food Stamp household head and

$$R_f = \left(\frac{\text{Average Monthly Sample Size}}{\text{Estimated Average Caseload Size}}\right) \times 10,000$$

If the estimated average food stamp caseload size is 55,000 and the average monthly sample size needed is 200 then

$$R_f = \frac{200 \times 10,000}{55,000} = 37$$

To obtain an integrated smaple, 37 of the same random numbers used to select the AFDC sample must be used.

The Medicaid quality control sample is selected in the same way, using the Social Security number of the primary person in the Medicaid case and

$$R_m = \left(\frac{\text{Average Monthly Sample Size}}{\text{Estimated Average Caseload Size}}\right) \times 10,000$$

If the estimated average caseload size is 71,000 and the average monthly sample size is $925/6$, then

$$R_m = \frac{(925/6) \times 10,000}{71,000} = 22$$

C. Frame Requirements

The only frame requirement for this method is that the frames for selecting the three quality control samples all contain a Social Security number for each case. The statistical validity of this method is not affected by an occasional case with no Social Security number if a provision is made to generate random numbers for the missing Social Security numbers. This will, however, reduce the amount of overlap in the samples and thus reduce the efficiency of the method.

D. Weighting Required

The Social Security number method produces self weighting samples for all three quality control systems.

E. Relative Efficiency

The Social Security number method is somewhat more efficient than the other method (Replacement Method B) of obtaining self weighting samples. This is because of the 167 cases which receive both a Medicaid and a Food Stamp review. The table below shows the number of cases of each type in the QC samples in the example state.

Benefit Combination	Caseload Size	AFDC Sample Cases	Medicaid Sample Cases	Food Stamp Sample Cases
AMF	14,700	388	194	326
AM	6,300	166	83	
MF	12,800		167	284
MO	37,200		491	
FO	27,500	___	___	610
		554	935	1220

The total number of distinct cases is 1928, which is 28% less than the total number of reviews (2709). In some states, including South Dakota, the relative efficiency of this method would be much higher due to more similarity in the number of random numbers needed to select the three samples.

V.   SEQUENTIAL RANDOM SAMPLE METHOD

A.   History and References

This method was first used in West Virginia to integrate the sample selection for AFDC, Food Stamp, and Medicaid quality control. It is more efficient than any of the previous methods and it does not require stratified frames (i.e. that the benefit combination be known at the time of QC sample selection). Its main disadvantage is that weighting must always be used in the compilation of quality control findings. This method is described in West Virginia Department of Welfare Integrated Sample Selection for AFDC, Food Stamp and Medicaid Quality Control.

B.   Sampling Procedure

1)   Obtain a sequential random sample of cases from the complete AFDC frame, using an interval of I_a.

2)   Obtain a sequential random sample of cases from the complete Food Stamp frame, using an interval of I_f.

3)   Obtain a sequential random sample of cases crom the complete Medicaid eligibility file, using an interval of I_m.

4)   In each of the cases selected, review all of the benefits (AFDC, Food Stamps, and Medicaid) that are received in the review month.

C.   Frame Requirements

This is the only method which does not have any frame requirements in additional to the frames that would be required to select independent samples for each of the quality control systems.

D. Weighting Required

Cases with different benefit combinations will have different probabilities of being included in the integrated QC sample. When tabulating QC findings it will be necessary to weight each case according to the inverse of its probability of selection. These weights are a simple function of the effective sampling intervals as described in the reference.

E. Relative Efficiency

This method is considerably more efficient than any of the previous methods because multiple benefit cases have a higher probability of being included in the sample and all of the benefits in each sample case are reviewed (this is not true in any of the previous methods).

The table below shows the approximate sample sizes which would be obtained in the example state.

	CASELOAD SIZE	SAMPLING INTERVAL	SAMPLE SIZE	AFDC REVIEWS	FOOD STAMP REVIEWS	MEDICAID REVIEWS
AFDC	21,000	504	250	250	175	250
Food Stamps	55,000	298	1107	354	1107	553
Medicaid	71,000	2477	172	46	68	172
TOTAL			1529	650	1350	975

The total number of reviews is 650 + 1350 + 975 = 2975. The number of cases to be reviewed is 1529, which is a 49% reduction in the number of cases that would have to be reviewed if independent sample selection were used.

VI. OPTIMUM ALLOCATION METHODS

A. History and References

The previous methods all result in the selection of different numbers of cases with each benefit combination. None of the allocations are optimal in the sense of minimizing the variance of error rate estimates. The optimal number of cases with a particular benefit combination to be selected can be computed once it is decided what to minimize and what the constraints are. This is an area where some policy decisions need to be made. Should there be constraints on the number of cases reviewed or on the variance of estimates? Is it necessary that the required QC sample sizes be step functions? Integrated sampling could be much easier and the need for weighting could be eliminated by using the same sampling fraction or interval in each QC system.

An example of an optimum allocation of cases based on one set of assumptions has been worked out and described by Manny Schwartz.

B. Sampling Procedure

For an optimal allocation design, each case would ideally be exposed to sampling only once and would be selected with a probability which would be the same for all cases with the same benefit combination and different for cases with different benefit combinations.

C. Frame Requirements

To select cases in the most optimal manner, it would be necessary to have a single frame (computer file or listing of the combined AFDC, Food Stamp and Medicaid caseloads). Each case should be listed only once and the benefit combination should be indicated. Unless a computer file of this type already exists, it would probably not be worth the effort to create such a frame just for the purpose of integrated sample selection.

Near optimal allocations could be obtained without a merged frame if the separate frames indicate what other benefits each case is receiving.

D. Weighting Requirements

Any optimated sample will require that the sample cases be weighted according to the inverse of the probability of selection for that type of case.

E. Relative Efficiency

The measure of efficiency that has been used here to compare the various methods of obtaining integrated samples is the number of cases reviewed divided by the number of reviews obtained. It is unlikely that any optimum allocation will be more efficient in this respect than the sequential random sample method, which selects more multiple benefit cases than one would go after if trying to minimize the variance of error rate estimates.

VIII. SUMMARY

The chart on the following page is a summary of some of the main differences among the various methods of obtaining integrated samples for AFDC, Medicaid, and Food Stamp Quality Control. The method with the most advantages is the Social Security number method, which does not require stratified frames and produces self weighting samples. This is not the most efficient method, but it is the most efficient method of obtaining self weighting samples. The more efficient methods all require weighting of the data and, except for the sequential random sample method, they all require stratified frames which might not exist in some states.

The process of selecting an integrated sampling method would involve, first of all, eliminating those which could not be implemented because of some barrier such as the lack of required frames. Then, if more than one method could be implemented, priorities must be determined for the other features. For example, which is more important, more efficiency or self weighting samples?

Since one of the methods has no frame requirements beyond what is needed to select independent samples, it is safe to say that at least one of the methods could be implemented in every state. There is enough efficiency in even the least efficient methods to compensate for the extra effort that will be involved in the expanded Medicaid Quality Control system.

	FRAME REQUIREMENTS	WEIGHTING REQUIRED?	PERCENT REDUCTION IN CASES REVIEWED
1. Replacement Method A	Stratified Frames	Yes-except for AFDC	35%
2. Replacement Method B	Stratified Frames	No	24%
3. Social Security Number Method	Social Security No. in Frames	No	28%
4. Sequential Random Sample	None	Yes	49%
5. Optimum Allocation Methods	Integrated Frame	Yes	

DESIGNING OPTIMAL INTEGRATED SAMPLES

By: Rudolph E. Schwartz
      Office of Research and Statistics
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Designing Optimal Integrated Samples
Rudolph E. Schwartz, Office of Research and Statistics
Social Security Administration

At present, there are in existence at least three quality control
programs which the States are required to carry out under Federal
guidelines. They are:

    Aid for Dependent Children - AFDC
    Food Stamps - FS
    Medicaid - Md

The purpose of each of the quality control programs is to measure and
by corrective action reduce the frequency of errors which are either
payments to ineligible recipients or over and under payments to eligibles.

The three programs have many similarities. Each consists of monthly
simple random samples of beneficiaries. Each program is operated
independently with its own program specifications and, in many States,
separate reviewers for each of the various programs.

Lately, under the pressure of increased cost and sample size demands,
the States have begun to review the assumptions of running each program
separately. It has been known that in many instances there is substantial
overlap between recipients and programs. For example, an AFDC recipient
might be eligible for both Food Stamps and Medicaid, or a Food Stamp
recipient might receive Medicaid, etc.

Therefore, many States have begun to see the advantage of thus interviewing for one program and receiving information that can be used by several programs.

In some States, there has been an effort to cross-train people trained in interviewing for several programs. People thus trained are called generic reviewers as opposed to specialized single program reviewers.

In a few States that are making efforts at integration, it has been shown that it is possible to achieve savings of between 30-40 percent by integrating as opposed to running separate programs.

Given that one has generic reviewers the sample design can be done in various ways.

1. One can continue to choose independent samples from each of the program files and after selection merge cases on individuals that belong to more than one program.

2. One can merge all three program files and construct mutually exclusive strata consisting of a maximum of seven (7) strata as follows:

(1) AFDC only; (2) AFDC-FS; (3) AFDC-FS-Md; (4) AFDC-Md; (5) FS only; (6) FS-Md; (7) Md only.

Having done this the problem became one of designing a sample that is optimal for all three programs combined. This paper describes the second approach.

An optimal sample takes into consideration 3 elements:

(1) Reliability or allowable sampling error.

(2) Variability of the universe or sub-universes from which samples are drawn.

(3) Cost of sampling which considers setup, travel, interview and verification costs.

The difficulty with designing an optimal sample is that each of the various programs has its own values for the three elements mentioned above. Thus the sample that is optimal for one program may not be optimal for another.

In order to solve such a problem for stratified samples and several programs one must solve a nonlinear programming problem.

Mathematical Formulation of an Optimal Stratified Integrated Sampling Problem Samples

$$\text{MIN } C = \Sigma\, a_h n_h$$

$j = 1 \ldots J$ programs

Subject to

$h = 1 \ldots L$ strata

$$V_j \leq C_j \quad \text{(neglecting finite correction factor)} \quad V_j = \sum_{h=1}^{L} \frac{W_h^2 S_{hj}^2}{n_h}$$

$$0 \leq n_h \leq N_h$$

where N = Total units of population

N_h = Total units in h stratum

n_h = Sample units in hth stratum

$W_n = N_h/N$ = Stratum weight

S_h^2 = estimate of population variance in h stratum

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Below is an example of a typical optimal solution which has been solved by a nonlinear programming package.

Example - Design of an optimal integrated sample. Assume the present three programs have the following sample size requirements.

Program	Sample	SRS Variance* (10^{-4})
Aid for Dependent Children (AFDC)	800	1.10
Food Stamps (FS)	1,200	0.61
Medicaid (MED)	275	2.76

*SRS Variance = Simple random sample variance equivalent for sample sizes if P = .095

Construct mutually exclusive strata by merging the files of the three programs into seven mutually exclusive strata.

Stratum No.		Population Size (000)	Factor	Cost Sampling	Unit Cost
1	AFDC	9	1	9.50	9.50
2	AFDC, FS	18	1/2	11.50	5.75
3	AFDC, FS, MED	2	1/3	13.50	4.50
4	AFDC, MED	1	1/2	11.50	5.75
5	FS	23	1	9.50	9.50
6	FS, MED	7	1/2	11.50	5.75
7	MED	45	1	9.50	9.50

MINIMIZE:

$$C = 9.50n_1 + 11.50n_2 + 13.50n_3 + 11.50n_4 + 9.50n_5 + 11.50n_6 + 9.50n_7$$

SUBJECT TO:

$$0 \leq n_1 \leq N_1 \; . \; . \; ; \; 0 \leq n_7 \leq N_7$$

$$\left(\frac{9}{30}\right)^2 \frac{(P_{11})(1-P_{11})}{n_1} + \left(\frac{18}{30}\right)^2 \frac{(P_{21})(1-P_{21})}{n_2} + \left(\frac{2}{30}\right)^2 \frac{(P_{31})(1-P_{31})}{n_3} + \left(\frac{1}{30}\right)^2 \frac{(P_{41})(1-P_{41})}{n_4} \overset{<1.10}{\underset{\times 10-4}{}}$$

$$\left(\frac{18}{50}\right)^2 \frac{(P_{22})(1-P_{22})}{n_2} + \left(\frac{2}{50}\right)^2 \frac{(P_{32})(1-P_{32})}{n_3} + \left(\frac{23}{50}\right)^2 \frac{(P_{52})(1-P_{52})}{n_5} + \left(\frac{7}{50}\right)^2 \frac{(P_{62})(1-P_{62})}{n_6} \overset{<0.61}{\underset{\times 10-4}{}}$$

$$\left(\frac{2}{55}\right)^2 \frac{(P_{33})(1-P_{33})}{n_3} + \left(\frac{1}{55}\right)^2 \frac{(P_{43})(1-P_{43})}{n_4} + \left(\frac{7}{55}\right)^2 \frac{(P_{63})(1-P_{63})}{n_6} + \left(\frac{45}{55}\right)^2 \frac{(P_{73})(1-P_{73})}{n_7} \overset{<2.76}{\underset{\times 10-4}{}}$$

Where $P_{11} = 09$, $P_{21} = .10$, $P_{31} = 08$, $P_{41} = 07$

$P_{22} = 06$, $P_{32} = 09$, $P_{52} = .10$, $P_{62} = 08$

$P_{33} = 08$, $P_{43} = .10$, $P_{63} = 07$, $P_{73} = .10$

$n_1 = 205$, $n_2 = 504$, $n_3 = 54$, $n_4 = 19$, $n_5 = 564$, $n_6 = 144$, $n_7 = 226$

Cost = 17852 Hrs.

Table 1 shows the results of constrasting a proportional sample which assumes that sampling costs and variability in all stratum are approximately equal and an optimal sample. The table is read as follows:

Column

1   Program name and strata used by the program

2   Population size of each stratum used by each program

3   Weight = N_i / N_1.

4   P = estimate of proportion of error in each stratum for the

                various programs

5   Theoretical proportional sample allocation (this sample would be

                self-weighting)

6   Actual proportional sample used

             Example — FS stratum 3 requires only 48 cases, however, since 54

                        cases have been finished to satisfy the requirements

                        of AFDC stratum 3 it would not be sensible to throw

                        away the 4 cases already completed unless self-

                        weighting is crucial.

7   Optimal sample allocation

Referring to table 1 we can see that optimal sample when compared with the

proportional sample is cheaper in the AFDC and MED strata but slightly more

expensive in the FS strata.

However, compared to independent simple random saples, both AFDC and FS are

substantially cheaper while Medicaid is slightly more expensive.

Table I - Contrast Between Proportional Sample and Optimal Sample

(1)	(2) Pop. (000)	(3) WT	(4) P	(5) Theor. Prop.	(6) Actual Prop.	(7) Optimal
AFDC						
1	9	.300	.09	239	239	204
2	18	600	10	480	480	483
3	2	067	08	54	54	42
4	1	033	07	27	27	18
Total	30			800	800	757
Var(10^{-4})				1.10	1.10	1.10
Cost -					5,429	5,065
-SRS*						7,600
FS						
2	18	.36	.06	432	480	493
3	2	04	09	48	54	42
5	23	46	10	552	552	578
6	7	14	08	168	168	147
Total	50			1,200	1,254	1,260
Var(10^{-4})				0.63	0.61	0.61
Cost -					9,213	9,860
-SRS						11,400
MED						
3	2	.036	.08	10	54	42
4	1	018	10	5	27	18
6	7	127	07	35	168	147
7	45	819	10	225	225	200
Total	55			275	474	407
Var(10^{-4})				3.12	2.76	3.12
Cost -					3,502	3,037
-SRS						2,613
Size (1) Net Size				1,505	1,559	1,716
(2) Gross Size					2,528	2,491

*SRS - Simple Random Sample Cost.

Stratum No.	Program Name
1	AFDC
2	AFDC, FS
3	AFDC, FS, MED
4	AFDC, MED
5	FS
6	FS, MED
7	MED

CRITERIA FOR SUBMISSION OF INTEGRATED
SAMPLE DESIGN PROPOSALS

By: Sean D. Hurley, Acting Chief
     Technical Services Branch
     Division of Quality Control
       Management
     Social Security Administration

<u>Criteria for Submission of Integrated QC Sample Design Proposals</u>

Integration of one or more of the Quality Control systems involves a variety of statistical, policy, and procedural problems. The Department of Health, Education, and Welfare believes that each State wishing to develop an integrated sample design is best qualified to search out solutions within the frame work of its own system. Each interested State should submit its proposal for integration concurrently to the respective Regional Offices (SSA/DA/HCFA) for review. The Regional Offices, in turn, will evaluate the proposal and provide technical assistance to the State, where needed, to insure adherence to the necessary criteria. The Regional Offices must then submit the proposal, with recommendations, to their respective Central Offices for final approval. (This procedure will facilitate the close coordination required between the various Agencies and insure that States are not operating under an unapprovable plan.)

State proposals for integration will be reviewed and approved on a State by State basis. Although precise criteria for the integration of all three programs has not been established, States submitting proposals should address the following issues:

A. <u>Integrity of Sample</u>

   <u>Design</u>

   1. Describe the method to be used in sample integration.

   2. Describe how the resulting sample will insure the validity of sample findings for each of the programs integrated.

3. Describe what impact the sample design will have on reporting and data requirements.

B. Integrity of the State Case Review Process

Review Process

1. Describe what impact the sample design will have on the review process. Consider that each program may have different review criteria, time constraints, and procedures.

2. Describe the case review process under the integrated sample design. Propose resolutions to problems created by integration of the review process.

3. Describe plans for staff training to insure the quality of case reviews. Describe the mechanism to be used to measure any change in the quality of reviews.

C. Corrective Action Process

Describe what changes, if any, will occur in the corrective action process.

D. Allocation of Staff

1. Describe what impact the integrated sample design will have on reviewer's workloads. What will be the average number of reviews completed per month per reviewer for each type of case review (integrated vs separate review, etc.).

2. Provide assurance that each of the samples will be completed within the time frames required.

3. Show proposed allocation of existing AFDC, FS, and MEQC staff.

4. Indicate what, if any, additional staff are required.

E. Cost Allocation

Show how QC administrative costs will be apportioned correctly between USDA and HEW.

F. Administration

Describe changes, if any, in organization and management of integrated QC process.

In addition to the above considerations, State estimates of the potential cost savings would be helpful. States planning to integrate their QC systems should submit their proposals as soon as possible and for their own protection, should not implement their plans until Central Office approval has been obtained.

Section III - <u>State Presentations</u>

Several States with experience in integrated Quality
Control samples were asked to make presentations
focused on highlighting specific aspects of their
systems. Illinois and Rhode Island, for example
outlined the impact sample integration had upon the
review process. Colorado and New York explained
their respective sampling designs, while Montana
discussed the cost benefits realized as a result of
their integrated sample design.

MONTANA — COST EFFECTIVENESS

Presented by: Ann Murray, Chief
               Quality Control
               Montana Department of Social
               and Rehabilitation Services

In 1976, Montana Quality Control found it impossible to complete the required number of reviews with three Food Stamp Reviewers and four A.D.C. Reviewers. It was decided that the only alternative was integration of the two programs.

This was accomplished July 1, 1976. In the first six months we saved 15,000 miles travel, broken down at 55 miles an hour saved about 38 working days and we were able to get the job done.

July 1, 1977, our Medical Quality Control 1115 Project ended. The legislature only allowed retention of three of the staff for reviewers and the program was placed under the Quality Control Supervisor. At that time we decided to integrate staff and add the Medical Quality Control to the already integrated A.D.C. Food Stamp Program.

We are unable to make comparisons as to travel time saved by doing this because of difference in size of staff but we have worked out a comparison on miles traveled and travel costs per review.

	Miles	Cost	Meals	Lodging	Total	#Reviews
1/1/76–6/30/76	48,000	$7,200	$2,400	$1,900	$11,500	7
7/1/76–12/31/76	33,000	4,950	1,800	1,400	8,150	7
1/1/77–6/30/77	35,582	5,337	1,000	737	7,074	$6\frac{1}{2}$
7/1/77–12/31/77	40,000	6,000	1,194	820	8,014	10

Travel and per diem cost per review

	#Cases Completed	Miles Per Case	Reviews Completed	Miles per Review	Cost per Review
1/1/76–6/30/76	400	120	400	120	$28.75
7/1/76–12/31/76	350	95	425	78	21.73
1/1/77–6/30/77	404	88	484	73	14.46
7/1/77–12/31/77	505	79	571	70	10.51

INTER-OFFICE CORRESPONDENCE

FROM: Ann Murray
Quality Control Supervisor

Date___May 18, 1977___

TO: Jack Carlson, Administrator
Economic Assistance Division

RE: Savings-- Integrated Sampling Plan

I would like to share with you the following report I received
from Statistics. This is a comparison of expenses involved
January thru June, 1976 before integration and July thru Decem-
ber 1976, after integration.

```
TRAVEL:  Jan. thru June 1976      48,000 miles
         July thru December       33,000 miles   saved 15,000 miles (31

MEALS:   Jan thru June            $2,400.00
         July thru Dec,            1,800.00      (25%)

LODGING: Jan thru June            $1,900.00
         July thru Dec,            1,400.00      (26%)

Jan thru June--each completed review      120 miles
July thru Dec.    "         "       "      95   "
  "       "       "     "   "       "      78   "  Integrated

15,000 miles averaging 50 miles an hour saved 38 days   $1,383.20
15000 miles at 15¢ a miles                               2,250.00
Saving on Meals                                            600.00
  "     "   Lodging                                        500.00
                            Total savings 6 months       $4,733.20
```
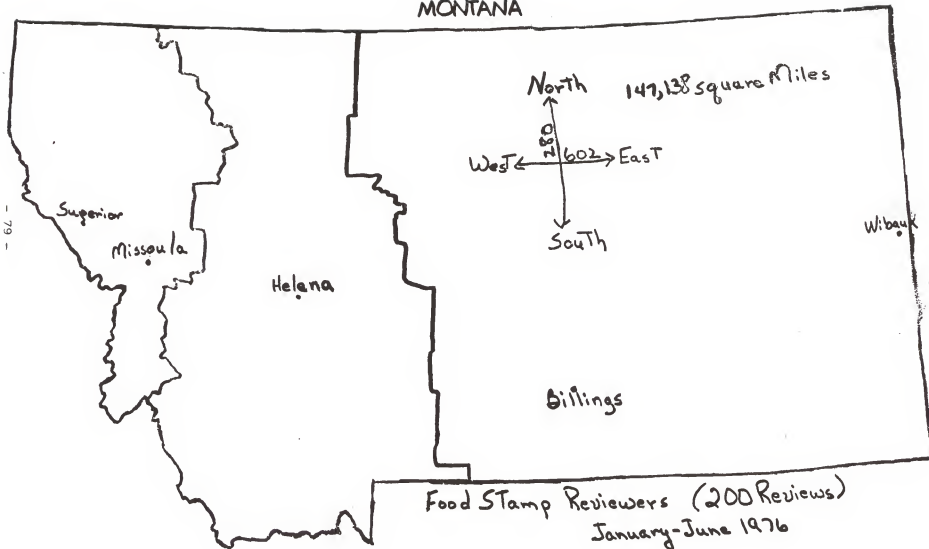
If this pattern holds, we should save $20,000 a year after
integration of the Medical Quality Control unit. This has been
accomplished only with the hard work and dedication of the entire
unit.

This also involves more completed cases than were being done in
the January thru June period--(475 to 540).

MONTANA

North   147,138 square Miles

West ← 280 602 → East

South

Superior
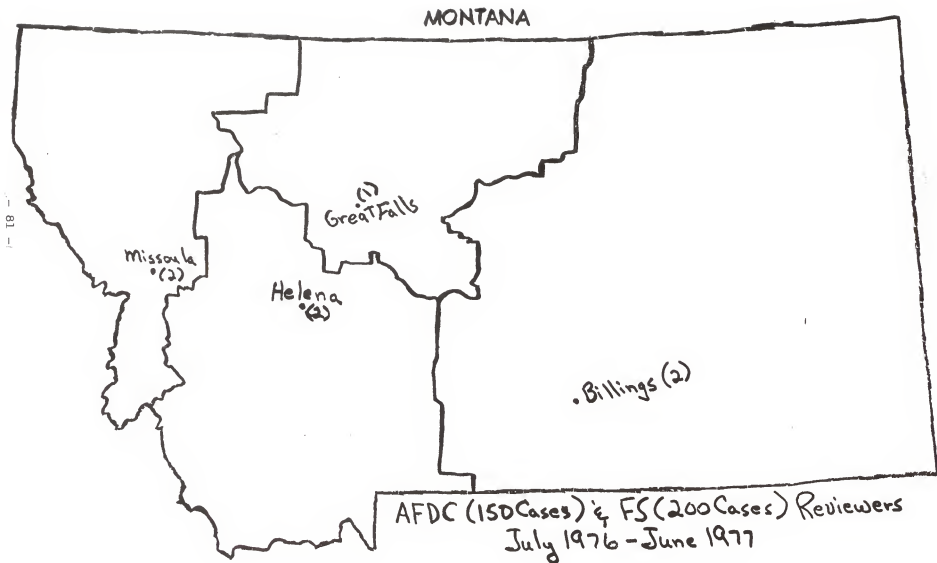Missoula

Helena

Wibaux

Billings

Food Stamp Reviewers (200 Reviews)
January–June 1976

- 79 -

MONTANA

147,138 square Miles

North
West ← 280 | 602 → East
South

Missoula

Great Falls

Helena

Billings

- 80 -

AFDC Reviewers (200 Cases)
January - June 1976

MONTANA

Great Falls (1)

Missoula (2)

Helena (2)

Billings (2)

AFDC (150 Cases) & FS (200 Cases) Reviewers
July 1976 - June 1977

- 81 -

MONTANA

Browning (1)

Kalispell (1)

Great Falls (2)

Missoula (2)

Helena (1)

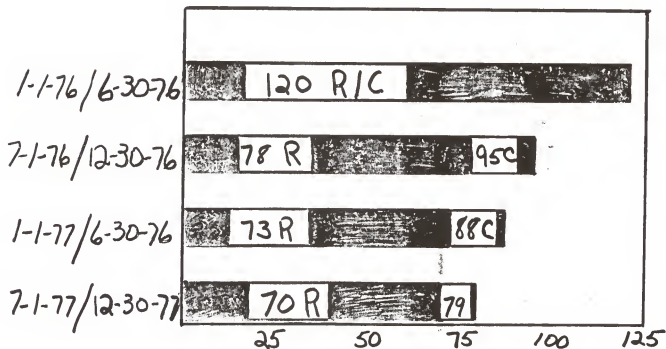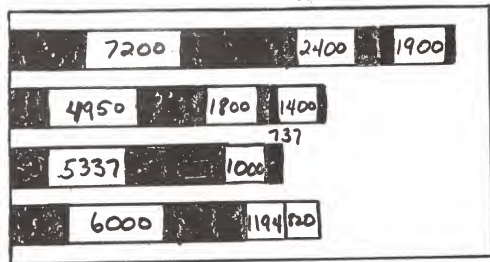Livingston (1)

Billings (2)
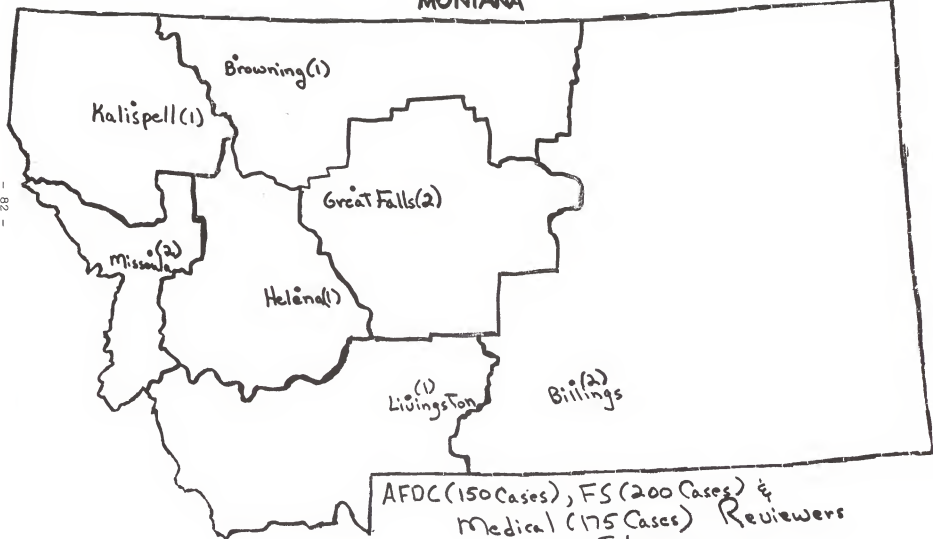
AFDC (150 Cases), FS (200 Cases) &
Medical (175 Cases) Reviewers
July 1977 - - -

- 82 -

Completed Review/Case Miles Traveled Jan. 1976 – Dec. 1977

Period		
1-1-76/6-30-76	120 R/C	
7-1-76/12-30-76	78 R	95 C
1-1-77/6-30-76	73 R	88 C
7-1-77/12-30-77	70 R	79

25   50   75   100   125

$ 2.C. Costs (Travel)

Period			
1-1-76/ 6-30-76	7200	2400	1900
7-1-76/ 12-31-76	4950	1800	1400
		137	
1-1-77/ 6-30-77	5337	1000	
7-1-77/ 12-31-77	6000	1194	120

Cost Per Case

28.75
21.73
14.46
10.81

$30
25
20
15
10
5

1-1-76/6-30-76
7-1-76/12-31-76
1-1-77/6-30-77
7-1-77/12-31-77
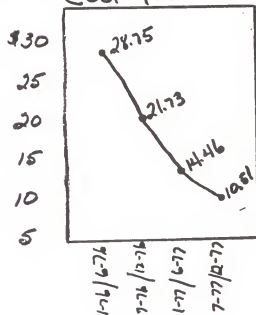
RHODE ISLAND — IMPACT ON REVIEW PROCESS

Presented by: Frederick Hajjar, Administrator
               Standards and Planning
               Rhode Island Department of Social
                 and Rehabilitative Services

In the good old days, before the quality control units were merged, there were two quality control units. The AFDC QC Unit consisted of one supervisor and five reviewers and the Food Stamp QC Unit consisted of one supervisor and five reviewers. As can be seen, the samples were completed in both instances, with a case per reviewer per month rate of 10.2. (1st overhead)

On July 1, 1976, when the universe was expanded to include Food Stamp recipients who also were receiving assistance payments, it can be seen that, while the AFDC sample was completed, the Food Stamp sample completion rate was still at the level of the prior 6-month period. (2nd overhead)

The units were merged during this 6-month period in order to maximize the review of the cases drawn relative to the number of reviewers on hand to complete the cases. However, this merging of the quality control units did not begin to have an effect on the completion rate until the January-June, 1977 sample period. As can be seen, the AFDC sample was again completed, but while the Food Stamp sample was not completed, you can see that the completion rate was increased from 38% for the initial 6-month period (July to December, 1976) to 69% for the second 6-month period (January to June, 1977). Also, it can be seen that the productivity of the reviewers increased from 9.9 cases per reviewer per month to 15.2 cases per reviewer per month. (3rd overhead)

The following 6-month period, that is, the July-December, 1977 period, shows an increase in the completion rate to 79% compared to the 69% of the previous 6 months. The productivity of the reviewers, however, leveled off to 13.9 cases per reviewer per month as opposed to the 15.2 cases per

reviewer per month for the previous six-month period. This can be attributed to the low productivity of the new staff that we added to aid in completing the larger Food Stamp sample. (4th overhead)

Also, as can be seen, the ineligibility rate has not only been kept at a very low level, i.e., 3.6% AFDC prior to the merger and 3.2% for the later six-month period, but was reduced. Also, Food Stamp ineligibility was decreased from 23.9% for the period prior to the merger of the units to 3.4% for the latest six-month period. The overall error rate for Food Stamps has decreased from 45.1% prior to the merger to 24.6% for the latest six-month period.

PRE-MERGING OF QUALITY CONTROL UNITS

1/1/76 TO 6/30/76

AFDC		FOOD STAMPS
30	MAN-MONTHS	30
313	CASES DRAWN	349
308	CASES COMPLETED	304
10.3	CASES/REVIEWER/MONTH	10.1 COMBINED = 10.2
	ERROR RATE:	
3.6% (11)	INELIGIBLE	23.9% (62)
9.7% (30)	OVERPAID	
	OVERCHARGED/ISSUED	21.2% (14)(4)
	UNDERCHARGED/ISSUED	(35)(2)
11 + 30 = 41	NUMBER OF ERROR CASES	62+14+35+4+2 = 117

2ND 6 MONTHS OF MERGED UNITS

1/1/77 TO 6/30/77

AFDC		FOOD STAMPS
33	MAN-MONTHS	28
329	CASES DRAWN	885
3.5	CASES COMPLETED	610 - 69% COMPLETION RATE
9.5	CASES/REVIEWER/MONTH	21.8 - COMBINED 15.2

ERROR RATE:

AFDC		FOOD STAMPS
3.95% (13)	INELIGIBLE	9.3% (57)
7.6% (25)	OVERPAID	
	OVERCHARGE/ISSUED	23.1 (37) (3)
	UNDERCHARGE/ISSUED	(100) (1)
38	NUMBER OF ERROR CASES	141

3RD 6 MONTHS OF MERGED UNITS

7/1/77 TO 12/31/77

AFDC		FOOD STAMPS
36	MAN-MONTHS	36
322	CASES DRAWN	884
309	CASES COMPLETED	695 - 79% COMPLE-TION RATE
8.6	CASES/REVIEWER/MONTH	19.3 - COMBINED 13.9
	ERROR RATE:	
3.2% (9)	INELIGIBLE	3.4%
5.8% (16)	OVERPAID	
	OVERCHARGE/ISSUED	21.2% (34) (0)
	UNDERCHARGE/ISSUED	(71) (1)
25	NUMBER OF ERROR CASES	106

AFDC		FOOD STAMPS
34	MAN-MONTHS	28
321	CASES DRAWN	553(SHOULD HAVE DRAWN 800- OVERSAMPLE 875)
307	CASES COMPLETED	304 - 38% COMP. RATE
9.9	CASES/REVIEWER/MONTH	10.8 - COMBINED = 9.9
	ERROR RATE:	
2.6% (8)	INELIGIBLE	8.1% (30)
8.1% (25)	OVERPAID	
	OVERCHARGED/ISSUED	20% (20) (3)
	UNDERCHARGED/ISSUED	(51) (0)
33	NUMBER OF ERROR CASES	104

ILLINOIS – IMPACT ON REVIEW PROCESS

Presented By: Eugene Muffler, Assistant Chief
                Bureau of Quality Control
                Illinois Department of Public Aid

IMPACT OF THE INTEGRATED AFDC-FS SAMPLE ON THE QC REVIEW PROCESS

When USDA-FNS required that AFDC cases be included in the Food Stamp QC
Review, Illinois was quick to develop interest in an integrated sample.
The reasons for this interest included:

1. The fact we have already integrated Review Staff. We had changed
    from the specialist to the generic approach.

2. It appeared to be a way of getting two reviews for the price of one.

3. Local offices had complained of the number of various people who re-
    view cases and this seemed like a way to reduce this outside traffic
    in the local office.

4. It seemed like a sound idea to gather information which would show
    the inter-relationships in different programs for the same case.

As always nothing is quite as simple or as productive as it first sounds,
some problems are bound to appear.

It seems appropriate, at this point, to describe, briefly, our sampling
method and to indicate a couple of problem areas. The existing AFDC
sample was utilized with no changes to obtain the sample for the PA-FS
Review. This involved 1200 cases plus an over sample. It was known all
PA cases were not certified to participate in the Food Stamp program,
but it could be projected that 870 completed PA-FS Reviews would be pos-
sible. An additional sample of 330 NA-FS cases was then pulled to bring
the total FS samples to the required 1200 case level. To complete both
the AFDC and FS Reviews a total of 2400 reviews were required. This sam-

pling plan would provide the 2400 reviews but would require that only 1530 cases be reviewed:

> 330 pure AFDC
>
> 870 AFDC-FS cases
>
> 330 NA-FS cases

Two major problems for the review process resulted from this sampling method. First, since the PA-FS sample was pulled from the AFDC Authoriza-tion file those cases certified to receive FS had to be identified. By our automated files, a check could be made and on the sample list itself data on FS certification was provided for most cases. Others, such as Emergency Authorization and some initial approvals, could not be counted as certified until the case record was audited. Those that were not cert-ified for FS were dropped as "listed in error". In effect, this meant we had to look at 330 cases in some manner that would not be reviewed for FS. This really created no difficulty once the initial adjustment was made and staff began to remember to do this in the initial audit. The time required for this check is minimal in most cases. Secondly, for both PA and NA-FS Reviews, the QC Review had to determine participation. Due to internal pro-blems, we have never been able to draw a FS sample from a participation file. In order to secure a timely sample, we had to rely on the certification file for sample selection. In both the PA and NA reviews, the first step was to determine if the household purchased stamps in the review month. This is accomplished during the client interview.

Drawing the FS sample in this manner created some reporting problems. Our Research and Statistics Unit developed a method of weighting PA and NA

cases for reporting findings so that a combined report could be made.

A very large factor to be considered in the integrated sample approach is the staff training or retraining which is required when a specialist concept has been utilized. Illinois had integrated review staff several years earlier. This change had been dictated by a need to have more flexibility in our ability to assign work to the QC staff so that all QC Reviews could be completed in a timely manner. We provided this training by utilizing QC staff as instructors, using the Agency's Staff Development Section and use of Federal QC Staff from the regional office.

There was and is a great deal of similarity between the AFDC and FS programs, both in the QC policies and methods and the eligibility and payment requirements. This made the training much easier. We did find, however, that specialized FS workers made the adjustment to AFDC easier than specialized AFDC workers adjusted to the FS program. This is at least partially explained by the fact that FS workers had for the most part done AFDC reviews at some time while AFDC Reviewers had not done FS reviews.

QC Staff did not have real serious problems adjusting to this change. They have become used to adapting to changes in Agency policy. QC Staff is also used to changes in the QC policies and methods when new review periods start even in the middle of review periods. Where difference exist between the programs, initial confusion and some continuing confusion exist. These types of situations include:

Income Exemptions

    AFDC   30 and 1/3

    FS   10% up to 30.00

Child Care

    AFDC   Maximum standards

    FS   No maximum

Assets

    AFDC $150 for the Grantee and $50 for each additional person

    FS $1500 per HH

Shelter Cost

    AFDC   Consolidated standard

    FS   As paid
                (now as billed)

Review periods and verification periods involved in the QC Review:

    AFDC   Focus on as known as of the review date and in the adminis-
            trative period.

    FS   Requires verification in the review month and averaging over
            the certification period.

Most of the difficulty has been related to failure to get sufficient
information in the first contact to cover the differences in the programs.
Experience has reduced these problems as workers have become familiar with
the dual approach.

Of all the various situations and conditions that exist in the integrated
AFDC-FS sample, the single most difficult and time consuming thing is the

lack of a uniform and combined review schedule and work paper for use by QC Staff. Great saving of time may occur by using one case record audit, one home visit and one verification effort for both the AFDC and FS review. All the information must then be recorded twice. Since recording is completed in either the AFDC case first and the FS case second or vice versa, there is a tendency to attempt to copy the one. As a result some of the difference between programs are overlooked and must be recovered later.

While we have not attempted to develop a single recording format in Illinois, it would seem to be practical. Such a document instead of causing confusion would focus on the individual program differences. The elimination of duplicate recordings would further reduce the time requirements for doing an integrated review.

We have done some studies of the time required to do QC Reviews in the various review programs. Several years ago and continuing at intervals, a Performance Analysis Section within our Agency has been working on a performance standard. In this standard, the number of hours of work required to complete a QC review has been studied.

There is some hesitation in using the figures developed so far as there is still a considerable number of questions as to the adequacy of the standard developed.

Our Performance Analysis Section originally indicated an AFDC Review took 5.8 hours and a FS Review took 4.3 hours. A internal study by QC indicated an ADC Review took 14 hours and a FS Review required 12 hours. A subsequent Performance Analysis study set a standard of hours as follows:

	COOK	D.S.
AFDC	6.6	9.2
FS	4.9	6.1
Combined AFDC and FS	7.6	10.2

The difference between the Cook (metro Chicago) and Downstate figures are related to greater travel requirements is the Downstate area where there is a much greater rural impact.

Even allowing that there is room for refinement in these standards, they do point out a savings in time for a combined review. This would appear to be 33.9% in Cook and 33.3% for the Downstate area. The sample caseload is not evenly distributed however: 75% is in Cook

25% is in Downstate

By using the standard hours and applying this to the expected sample distribution total savings is estimated at 24% of the time required for independent reviews.

	COOK	Standard	Hours		D.S.	Standard	Hours		T.S.	HR.
	Cases x	Hours =	Required		Cases x	Hours =	Required			
AFDC	900 x	6.6 =	5940		300 x	9.2 =	2760		1200	8700
FS	900 x	4.9 =	4410		300 x	6.1 =	1830		1200	6240
Total	1800 x	. =	10350		600 x	--- =	4590		2400	14940
Pure AFDC	247 x	6.6 =	1630.2		83 x	9.2 =	763.6		330	2392.0
Combined AFDC/FS	652 x	7.6 =	4955.2		218 x	10.2 =	2223.6		870	7178.3
Pure FS	247 x	4.9 =	1210.3		83 x	6.1 =	506.3		330	1716.6
Total cases	1146		7795.7		384		3493.5		1530	11289.2

Total Reviews	1798	602	2400
Savings Hours	2554.3	1096.5%	3650.8
	24.7%	23.9%	24.4%
Staff	3.2	1.4	4.6

Additional savings are involved in travel cost saved. Unfortunately, we have not as yet been able to develop this item.

CONCLUSION:

There are problems in developing a valid sample. These are more the problem of statistician than for those of us in the review activity arena. Problems in training staff and in helping staff adjust to the dual approach do exist. The development of accurate studies on the savings of time and money still need to be worked out.

Our experience indicated the integrated sample is possible, if practical and will be most effective. We believe that not only should the AFDC and FS sample be integrated but Medicaid Reviews can also be integrated. To do so and to provide valid and effective results, QC staff must continue to be obtained from experienced caseworkers and must have a workload which allows sufficient time for information findings, verification, evaluation and decision making.

At the Federal level all Agencies involved must provide assistance to the states by:

1. Developing more uniform policies and procedures for determining eligibility and payment status.

2. Developing uniform QC procedures and methods and most importantly a single reporting and recording document to reduce duplication of effort.

3. Developing national standards of performance for QC activities which will enable State QC Units to have a basis for requesting staff and QC resources.

COLORADO - INTEGRATED SAMPLE DESIGN

Presented by: George Kurian, Statistical
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AN OUTLINE OF COLORADO
INTEGRATED QC SAMPLING SYSTEM *

On November 12, 1975, the state received a memorandum from FNS, West Central
Regional Office which mandated the inclusion of Public Assistance Food Stamp
cases in the QC universe effective July, 1976. Until that time only NPA cases
were subject to the QC review process. The new mandate increased the sample size
from 800 to 1200. This new regulation was implemented at a time when the State
could not even complete the 800 reviews for FNS. In fact the State never did
complete 800 reviews because of the insufficient Food Stamp QC review staff. Our
request for additional reviewers to implement the new regulation was denied by
the State Legislature. USDA threatened us with fiscal penalty. This situation
lead us to look at the whole QC operations in a different dimension in order to
bring maximum efficiency. The new mapping of these problems shed light on a
twofold answer: 1) integration of the universes and 2) reduction of the number
of separate reviews required for each one of the QC programs.

Sample surveys are often integrated when the sampling units are areas. The
integration technique is widely used in agricultural surveys. The Square Grid
Method (Haynes, J.D. (1948) M.S. Thesis): Central Square Grid (Milne, A. (1959),
Biometrics, 15, p. 270-297): Unaligned Sample (Quenouille, M.H (1949):
"Problems in Plane Sampling". Ann. Math. Stat, 20, p. 355-375: Das. A. C.
"Two Dimensional Systematic Sampling and the Associated Stratified and Random
Sampling", (Sankhya, 10, p. 95-108): Extension of Latin Square (Homeyer, P.G.,
and Black, C.A (1946): "Sampling Replicated Field Experiments on Oats for Yield
Determinations", Proc. Soil Sci. Soc. America, 11, p. 341-344): Lattice Sampling
(Yates, F. (1960): and "Sampling Methods for Census and Surveys", Charles Griffin
and Company, London, are some of the existing pioneering works in the field of
sampling integration.

The AFDC, Medicaid and Food Stamps case evaluation processes which comprise the three QC review operations, can be integrated since the eligibility for each one of these programs depends mainly on income and resources. Age, disability, marital status, presence of children, school attendance etc. are, I would call, technical eligibility conditions. However, if these technical conditions are met, the income and resources determine an applicant's eligibility for one or all three program areas. Thus, basically the same people receive the benefits under these three programs. If this is the case, can't we design a sampling system which would maximize the selection of samples from the multiple program beneficiary segments of the three universes? The burden of designing such a system rests with the states, since one federal agency seldom knows what the other agency does, and the state is the point of convergence of all the transmittals from the federal agencies.

Our analysis of the three populations as intersecting sets helps us to classify the cases which are included in the three QC processes by their levels of program participation. Seven possible strata will emerge through this classification procedure. These are depicted below.

SIX MONTH UNIVERSES
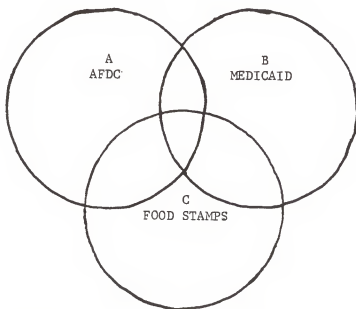
A = AFDC

B = Medicaid

C = Food Stamps

Each of the three QC universes is given by the union of four disjoint sets. The AFDC universe is given by 1. $A = [(A \cap B) \cup (A \cap C) - (A \cap B \cap C)]$, 2. $[(A \cap B) - (A \cap B \cap C)]$, 3. $[(A \cap C) - (A \cap B \cap C)]$, and 4 $(A \cap B \cap C)$. The Medicaid Universes is given by 5. $B = [(A \cap B) \cup (B \cap C) - (A \cap B \cap C)]$, 6. $[(A \cap B) - (A \cap B \cap C)]$, 7. $[(B \cap C) - (A \cap B \cap C)]$, and 8. $(A \cap B \cap C)$. The Food Stamp Universe is given by 9. $C = [(B \cap C) \cup (A \cap C) - (A \cap B \cap C)]$, 10. $[(B \cap C) - (A \cap B \cap C)]$, 11. $[(A \cap C) - (A \cap B \cap C)]$, and 12. $(A \cap B \cap C)$.

In December 1975, I discussed these ideas in general with the DHEW Regional Office, USDA Regional Office in Dallas and FNS Office in Washington, D.C. The DHEW Regional Office offered encouragement whereas the USDA Office began to pour questions and more questions on us. At this stage, I discussed this integration idea with Professor Herbert Solemon of Stanford University, the USDA'S Consultant, who talked to the USDA Washington Office and convinced them of the advantages of the integrated design. In the early part of 1976, we discussed these ideas with Dr. Victor Kugjasky and Mr. William Hickey of DHEW, Washington, D.C. They advised us to apply for a Research and Demonstration Project since DHEW is looking for ways and means to reduce the impact of all regulations on the states and to minimize the costs. We applied for an 1115 project in February, 1976. This application was approved in November of 1977, and the project started on December 1, 1977. The lack of the specifics of the anticipated Food Stamp regulations and MEQC changes have slowed the progress of the project work at this time. We hope to complete this project by July, 1979.

We decided to integrate the AFDC and Food Stamp QC Programs effective July 1, 1976 because of the anticipated delay in getting the 1115 project proposal approved. Only such an approach could give us a viable means of completing the mandated 1200 FS-QC reviews. The design approved by USDA and DHEW is described below.

1. Select the AFDC Samples according to the instructions given in the AFDC Manual.

2. Estimate the Non-AFDC and AFDC Case loads for six months. Determine the number of samples to be selected from the Non-AFDC stratum and the interval.

3. Select 1_i samples from the Non-AFDC stratum using the interval computed above.

4. Determine the sample size for the AFDC group by computing

$$m_i = \frac{M_i 1_i}{L_i} \, , \text{ where}$$

m_i = the AFDC-FS Sample size for the i-th month,

M_i = the actual AFDC-FS population size for the i-th month,

L_i = the actual Non-AFDC-FS population size for the i-th month, and

1_i = the number of Non-AFDC-FS Samples selected for the i-th month.

5. Obtain the FS participation information on each one of the cases on the AFDC sample listing.

6. Subsample from the AFDC cases participating in FS, the list obtained at step 5, the required m_i samples.

After implementing this system in July, 1976, we did a time study. The

results from this study are given below.

	AVERAGE TIME (Hours) PER COMPLETED CASES			
	AFDC	AFDC with FS	NON-AFDC-FS	MED
Case Record Analysis	1.87	-	1.05	1.38
Home Visit	1.24	-	1.38	1.02
Travel	1.44	-	4.04	1.44
Case Completion	4.10	2.95	4.59	2.07
TOTAL	8.65	2.95	11.06	5.91
Reviews Required	800	430	770	275

No explanation is necessary to notice the cost savings-approximately 5 reviewers.

As we mentioned above, the FS participation of the AFDC Cases were determined manually from the FS-11 (Counter Issuance Record) and FS-18 (Mail Issuance Log). We also issued a County Letter so that the Counties could provide us the information whether a participating case is or is not an AFDC headed household. Since we were anticipating the approval of the 1115 project, no extensive training to the County Personnel was provided. Misclassification of cases by the Counties reduced the number of matched FS and AFDC cases and affected the cost benefit.

When we implemented this design, the reviewers were not cross trained in all three QC programs. The FS reviewer, and the AFDC and Medicaid reviewer team still exist. Because of all these problems, the cost savings we have shown in the above table are only minimal.

Even though it is not possible to isolate the effect of this mini-integration

from the other administrative actions, which might have impacted the error rates during the QC periods, specified below, we are showing below the QC error rates in the AFDC and FS programs.

PERIODS	QC CASE ERROR RATES - POSITIVE			
	AFDC %	AFDC FS %	NON-AFDC FS %	TOTAL FS %
July - Dec. 1975	18.5			47.5
Jan. - June 1976	18.7			41.4
July - Dec. 1977	13.3	25.6	31.4	32.0
Jan. - June 1977	10.7	24.8	30.8	22.7

The 1115 project we are working on now will eliminate the FS reporting problems and integrate the AFDC, FS and Medicaid Quality Control Systems. In order to eliminate the FS reporting problems, we have tentatively designed a new FS-9 form, an authorization and participation report. This form would replace the existing FS-9, FS-18 forms. The work load at the County level will be reduced. This new form will collect the head of the household's case number, the public assistance category code and the Social Security Number. This information will help us to detect duplicate participation either in the same county or in some other county, and this form will provide the data for the FNS-256 report which in turn will result in the better management information for the FS Division and the Department of Social Services. A copy of this form is attached here to. We cannot, however, implement this form or begin to train the County personnel because of the lack of finalization of the FS regulations at present and also because of the pending determination of the implementation date.

As we all know, the Medicaid QC is going to change. Who will be included and excluded from the universe is unknown at this time. In Colorado, an AFDC case may have more than one individual eligible for Medicaid. In the universe, should we count them individually or count the case as one case? The eligibility for assistance is mainly based on income and resources. Some of the members in a family may or may not meet some of the technical conditions and, consequently, they do not qualify for Medicaid. If only one individual within a case is included in the frame and if this one is selected for review, the reviewer has to make an initial determination of whether or not the whole family is eligible based on income and resources. This assumes, of course, that this individual meets the technical conditions. What will be the new review forms and the contents of the 6-month reports? We all hope these concerns will be answered soon.

Once we get the FS regulations finalized and the Medicaid Universe clearly defined, the project can start work on the computer programs needed to automate the FS-9 and create a composite record for each case to be included in the universe. This composite record will contain the information on the multiple program participation and the benefits received under each one of the programs. The universe will then contain only these records from which samples will be selected for reviews in the three QC areas. The sample listings would also carry the multiple program participation information.

In the AFDC-QC, we can restrict the universe to the main payrolls. All the main payrolls will be in the state office and ready for sampling, using computer, by the end of the 2nd week within a month. We can restrict the universe to the main payrolls only if certain conditions are satisfied. If HCFA and FNS have the same type of rules, we will be able to get all the samples selected in the second weekend and ready for assignments to the reviewers in the 3rd week. Thus, the reviewers will have two to three additional weeks to work on these cases.

We are planning to integrate the review forms, i.e., the work sheets and data sheets, to the maximum extent that we can. The changes in the MEQC and FS-QC may be a blessing in disguise. We also plan to have only one review data file which can provide the information required to generate all 6 month federal reports and the monthly status reports.

Since a case will be reviewed for multiple QC programs, we may be able to get satisfactory estimates by different strata of the amount of money that federal, state or local government paid in error. The strata are as follows: (1) AFDC only, (2) AFDC and FS, (3) AFDC and MED, (4) AFDC, FS and MED, (5) FS and MED, (6) FS only, and (7) MED only. Corrective actions can be concentrated on those areas where significant amounts of money are wasted. Also, any corrective action taken in a stratum consisting of multiple programs can kill two or three birds at a time. This can save the state agency the time they spent in taking different corrective actions aimed at the same group of clients or in going against the groups where the benefit from the corrective action will be insignificant.

When a reviewer finds there exists an error, he/she sends a QC-10 report to the county requesting that the situation be corrected. The reviewer needs to send only one QC-10 report to the county for all error cases from the multiple participation stratum. The county can take action to correct the situation in multiple program areas thus resulting in some savings in time at the county level.

As I mentioned earlier, there exists a team of reviewers for Public Assistance QC and another team for FS-QC. Because of this situation, the supervisors in the QC section do not have equal work loads. Under this full integration of the three QC programs, where the reviewers will be assigned cases from all the three QC areas, the units within the QC section can be rearranged so that the supervisors will have equal work loads. Also, the reviewers will not have any good reason to complain that a FS case is tougher than an AFDC case or vice-versa.

Since all reviewers will be doing all types of case reviews, we may be able to outstation reviewers to three or four towns in the State so that the reviewers from the central office do not have to travel all the way to the distant towns to review the cases from those areas. This will cut down the travel time possible overhead expenditures.

We all know that people seldom welcome and appreciate changes. That is simply human nature. The reviewers do criticize the integration approach because they think that they will have to learn the rules and regulations for each program and keep abreast of all the rule changes for each program. This is true but the reviewers who are now reviewing AFDC and AFDC-FS, though they also complained prior to the present mini-integration, have since changed their attitudes. The junior most reviewers think that they may be laid off because of fewer staff requirements. However, this is highly improbable since more QC requirements may be coming down and because program divisions seem to always be needing more people to administer their programs in providing ever expanding services to needy people.

Another major problem, especially in the states where the state supervises and the county administers, is to get the data correct. If wrong FS case numbers are provided by the counties, the matching of the cases becomes impossible and, consequently, will reduce the cost efficiency. We hope to minimize these data errors by providing extensive training to the county staff.

SAMPLE DESIGN

None of the three agencies is amenable to a drastic change in their sampling plans. Consequently, we had to design a sampling scheme which would satisfy everybody. This plan may not be the best cost benefical or an optimal plan.

We plan to select the AFDC samples according to the AFDC Manual. The selection of a systematic sample from the AFDC frame would provide us a stratified proportional sample. Since the sampling fraction is uniform, the design would provide us a self weighting sample. Let n_{11}, n_{12}, n_{13} and n_{14} be the number of samples selected from the strata of sizes N_{11}, N_{12}, N_{13} and N_{14}. The first subscript denotes the QC program and the second subscript denotes the strata. The strata definitions are given on page 3.

FNS, as per their memorandum of Sept 7, 1976, wants only a proportional representation of AFDC and Medicaid cases in their QC sample. Let N_{31}, N_{32}, N_{33} and N_{34} be the strata sizes in the Food Stamp Universe and the number of samples which would be selected, based on their manual instructions, from these strata be n_{31}, n_{32}, n_{33} and n_{34}. These sample sizes are determined in such a way that $m_{3i} = \frac{m_{3.}}{N_{3.}} \times N_{3i}$ for each i, where $m_{3.} = m_{31} + m_{32} + m_{33} + m_{34}$. $N_{3.}$ is defined in the same manner.

N_{21}, N_{22}, N_{23}, N_{24}, m_{21}, m_{22}, m_{23}, and m_{24} are defined as above for the Medicaid Universe since HCFA has changed its' universe from the paid claims to eligibles and eliminated the condition to select one-half of the sample from the institutions stratum. This may change their sampling criteria and we would be able to fix $m_{2i} = \frac{m_{2.}}{N_{2.}} \times N_{2i}$.

On January 31, 1978, Mr. Manny Schwartz informed me that FNS and HCFA have

agreed with him to review all available cases in a stratum instead of subsampling or taking additional samples to meet the condition of proportional representation. In light of our discussion on that matter, I will henceforth ignore the last two paragraphs on page 4.

$$N_{12} = N_{22}, N_{13} = N_{33}, N_{32} = N_{23}, N_{14} = N_{24} = N_{34}.$$

Now let us state the constraints imposed on the sample sizes.

$$n_{11} + n_{12} + n_{13} + n_{14} = 800$$
$$m_{21} + m_{22} + m_{23} + m_{24} = 300$$
$$m_{31} + m_{32} + m_{33} + m_{34} = 1200$$

Theorem 1

The system of equations $A x = g$ is consistent if and only if $AA^- g = g$

Theorem 2

The BAS (Best Approximation Solution) to the inconsistent system of equations $A x = g$ is x_0 where $x_0 = A^- g$.

Rewriting the constraint equations as

$$a_1 + a_2 + a_3 + a_4 = 800$$
$$b_1 + b_2 + k_1 a_3 + k_2 a_4 = 1200$$
$$c_1 + k_3 a_2 + k_4 b_2 + k_5 a_4 = 300$$

help us to write these in the following matrix notation.

$$\begin{bmatrix} 1 & 1 & 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & k_1 & k_2 & 1 & 1 & 0 \\ 0 & k_3 & 0 & k_5 & 0 & k_4 & 1 \end{bmatrix} \begin{bmatrix} a_1 \\ a_2 \\ a_3 \\ a_4 \\ b_1 \\ b_2 \\ c_1 \end{bmatrix} = \begin{bmatrix} 800 \\ 1200 \\ 300 \end{bmatrix}$$

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Let A denote the coefficient matrix. A'A is a symmetric matrix and $A^- =$ $\frac{A'}{|A'A|}$. Thus, there does exist a BAS solution which will be a function of

k_1, k_2, k_3, k_4 and k_5. Different types of plans could be obtained choosing

the values of these variables. However, we would be using an inspection method

to get the solutions.

Since we know that the above set of equations has finitely many solutions

and Mr. Schwartz has the agreement from HCFA and USDA that they do not need

any more of the proportional representation from each one of the respective

strata in their samples, we will review n_{13} and n_{14} samples for AFDC and FS,

and n_{12}, m_{32} and n_{14} samples for AFDC/FS and Med.

What we discussed above should be the end product at the end of the 6

month QC period. The universe sizes are estimates. Samples are selected

every month. Every month these circumstances make the sample selection

process a little more complicated. We would describe the monthly selection

processes for the three QC programs below.

Let A be the estimated universe for the AFDC-QC. The interval for 6

months is $I = \frac{A}{800}$. A stands for the actual population size and a stands for

the number of samples selected in the following table. Also $a_{i.} = A_i$. and
$$a_{ij} = A_{ij}$$
$$\frac{1}{I}$$

$a_{ij} = A_{ij} \cdot \frac{1}{I}$.

TABLE 1

DISTRIBUTION OF THE SELECTED
AFDC SAMPLES

MONTHS	AFDC	AFDC, MED	AFDC, FS	AFDC, MED FS	TOTAL
1	A_{11} a_{11}	A_{12} a_{12}	A_{13} a_{13}	A_{14} a_{14}	$A_{1.}$ $a_{1.}$
2	A_{21} a_{21}	A_{22} a_{22}	A_{23} a_{23}	A_{24} a_{24}	$A_{2.}$ $a_{2.}$
3	A_{31} a_{31}	A_{32} a_{32}	A_{33} a_{33}	A_{34} a_{34}	$A_{3.}$ $a_{3.}$
4	A_{41} a_{41}	A_{42} a_{42}	A_{43} a_{43}	A_{44} a_{44}	$A_{4.}$ $a_{4.}$
5	A_{51} a_{51}	A_{52} a_{52}	A_{53} a_{53}	A_{54} a_{54}	$A_{5.}$ $a_{5.}$
6	A_{61} a_{61}	A_{62} a_{62}	A_{63} a_{63}	A_{64} a_{64}	$A_{6.}$ $a_{6.}$
TOTAL	$A_{.1}$ $a_{.1}$	$A_{.2}$ $a_{.2}$	$A_{.3}$ $a_{.3}$	$A_{.4}$ $a_{.4}$	A $a = 800$

TABLE 2

DISTRIBUTION OF EXPECTED AND
AVAILABLE FOOD STAMP SAMPLES

MONTH	FS	FS, MED	FS, AFDC	FS, MED AFDC	TOTAL
1	F_{11}	F_{12}	$F_{13} = A_{13}$	$F_{14} = A_{14}$	$F_{1\cdot}$
	f_{11}	f_{12}	$f_{13}, \ a_{13}$	$f_{14}, \ a_{14}$	$f_{2\cdot}$
2	F_{21}	F_{22}	$F_{23} = A_{23}$	$F_{24} = A_{24}$	$F_{2\cdot}$
	f_{21}	f_{22}	$f_{23}, \ a_{23}$	$f_{24}, \ a_{24}$	$f_{2\cdot}$
3	F_{31}	F_{32}	$F_{33} = A_{33}$	$F_{34} = A_{34}$	$F_{3\cdot}$
	f_{31}	f_{32}	$f_{33}, \ a_{33}$	$f_{34}, \ a_{34}$	$f_{3\cdot}$
4	F_{41}	F_{42}	$F_{43} = A_{43}$	$F_{44} = A_{44}$	$F_{4\cdot}$
	f_{41}	f_{42}	$f_{43}, \ a_{43}$	$f_{44}, \ a_{44}$	$f_{4\cdot}$
5	F_{51}	F_{52}	$F_{53} = A_{53}$	$F_{54} = A_{54}$	$F_{5\cdot}$
	f_{51}	f_{52}	$f_{53}, \ a_{53}$	$f_{54}, \ a_{54}$	$f_{5\cdot}$
6	F_{61}	F_{62}	$F_{63} = A_{63}$	$F_{64} = A_{64}$	$F_{6\cdot}$
	f_{61}	f_{62}	$f_{63}, \ a_{63}$	$f_{64}, \ a_{64}$	$f_{6\cdot}$
TOTAL	$F_{\cdot 1}$	$F_{\cdot 2}$	$F_{\cdot 3} = A_{\cdot 3}$	$F_{\cdot 4} = A_{\cdot 4}$	F
	$f_{\cdot 1}$	$f_{\cdot 2}$	$f_{\cdot 3}, \ a_{\cdot 3}$	$f_{\cdot 4}, \ a_{\cdot 4}$	$f = 1200$

At the time of sampling we will know the values of F_1, F_2, F_3, F_4, F_5, and F_6, whereas F has to be estimated in advance to determine the

interval $1 = \dfrac{F_1}{1200}$. In the first month we would select $f_1 = F_1$ samples.

From each stratum we would select $f_{1j} = f_1 \times \dfrac{F_{1j}}{F_1}$, $j = 1, \ldots, 4$. The

number of samples which would be selected in the second month is $f_2 =$

$$\left[\frac{F_1 + F_2}{1} - \frac{F_1}{1} \right]$$ The Strata Samples will be given by $f_{2j} = f_2 \times \dfrac{F_{6j}}{F_6}$. Thus

at the end of a 6-month period we would get $f = \sum\limits_{i} f_i$ samples.

Review all the a_{i3} and a_{i4} samples for AFDC and FS. Then $f_i - (a_{i3} + a_{i4})$

will be selected from strata 1 and 2 systematically and reviewed for FS.

TABLE **3**

DISTRIBUTION OF EXPECTED AND
AVAILABLE MEDICAID SAMPLES

MONTHS	MED	MED, AFDC	MED, FS	MED, AFDC FS	TOTAL
1	M_{11} m_{11}	$M_{12} = A_{12}$ m_{12}, a_{12}	$M_{13} = F_{12}$ m_{13}, f_{12}	$M_{14} = F_{14} = A_{14}$ m_{14}, a_{14}, f_{14}	$M_{1.}$ $m_{1.}$
2	M_{21} m_{21}	$M_{22} = A_{22}$ m_{22}, a_{22}	$M_{23} = F_{22}$ m_{23}, f_{22}	$M_{24} = F_{24} = A_{24}$ m_{24}, a_{24}, f_{24}	$M_{2.}$ $m_{2.}$
3	M_{31} m_{31}	$M_{32} = A_{32}$ m_{32}, a_{32}	$M_{33} = F_{32}$ m_{33}, f_{32}	$M_{34} = F_{34} = A_{34}$ m_{34}, a_{34}, f_{34}	M_3 $m_{3.}$
4	M_{41} m_{41}	$M_{42} = A_{42}$ m_{42}, a_{42}	$M_{43} = F_{42}$ m_{43}, f_{43}	$M_{44} = F_{44} = A_{44}$ m_{44}, a_{44}, f_{44}	$M_{4.}$ $m_{4.}$
5	M_{51} m_{51}	$M_{52} = A_{52}$ m_{52}, a_{52}	$M_{53} = F_{52}$ m_{53}, f_{52}	$M_{54} = F_{54} = A_{54}$ m_{54}, a_{54}, f_{54}	$M_{5.}$ $m_{5.}$
6	M_{61} m_{61}	$M_{62} = A_{62}$ M_{62}, a_{52}	$M_{63} = F_{62}$ m_{63}, f_{62}	$M_{64} = F_{64} = A_{64}$ m_{64}, a_{64}, f_{64}	$M_{6.}$ $m_{6.}$
TOTAL	$M_{.1}$ $m_{.1}$	$M_{.2} = A_2$ $m_{.2}, a_{.2}$	$M_{.6} = F_{.6}$ $m_{.6}, f_{.2}$	$M_{.4} = F_{.4} = A_{.4}$ $m_{.4}, a_{.4}, f_{.4}$	M $m = 300$

We have to select 300 samples for the Medicaid Qc. A systematic sample of this size can be selected by choosing an interval $p = \dfrac{M}{300}$, where M is the estimated population size for 6 months. M_i and m_{ij} can be defined in the same way as we defined the similar variables above.

As before, we would compute $m_{i1} = m_{i.} - (a_{i2} + f_{i2} + a_{i4})$ and select them systematically from stratum 1.

In both the FS and Medicaid tables, I have shown all the f_{ij} and m_{ij} sample sizes to indicate that they will be the sizes if we use proportional allocation to get uniform sampling fractions.

The following 3 tables would exemplify the selection processes. The population sizes used here are estimates.

TABLE 4

DISTRIBUTION OF SELECTED
AFDC SAMPLES

MONTH	AFDC	AFDC, MED	AFDC, FS	AFDC, FS MED	TOTAL
1	1000	2000	7000	20000	30,000
	4	10	35	98	147
2	1500	2400	6100	19000	29,000
	7	12	30	93	142
3	1200	2300	6500	21000	31,000
	6	11	32	103	152
4	1400	2100	4000	20500	28,000
	7	10	19	101	137
5	1500	1500	7000	22000	32,000
	7	8	34	108	157
6	500	1500	8000	20,000	30,000
	2	8	39	98	147
TOTAL	7100	11800	38600	122,500	180,000
	33	59	189	601	882

Let the AFDC Universe for 6 months be = 30,000 x 6

In order to select 800 x 1.10 = 880 samples, allowing for drops,

the interval = $\frac{30,000 \times 6}{880}$ = 204

TABLE 5

DISTRIBUTION OF EXPECTED AND
SELECTED FS SAMPLES

MONTHS	FS	FS, MED	FS, AFDC	FS, MED AFDC	TOTAL
1	20000 96	3000 14	7000 35 34	20,000 98 96	50000 240
2	19000 91	4900 24	6100 30 29	19,000 93 91	49000 235
3	18000 87	500 26	6500 32 32	21,000 103 101	51,000 246
4	21000 101	6500 31	4000 19 19	20,500 101 99	52,000 250
5	18000 86	3000 15	7000 33	22,000 106	50000 240
6	17000 82	3000 14	8000 39	20,000 96	48000 231
TOTAL	113000 543	25,900 124	38600 186	122,500 589	300,000 1442

Let the FS Universe for 6 months be 300,000.

An interval of $\frac{300,000}{1440} = 208$ would be required to

select 1200 x 1.2 = 1440 samples.

Please notice that 1,457 cases are available for FS.

TABLE 6

DISTRIBUTION OF EXPECTED AND
SELECTED MEDICAID SAMPLES

MONTHS	MED	MED, AFDC	MED, FS	MED, AFDC FS	TOTAL
1	17,000 19	2,000 10 2	3,000 14 4	20,000 98,96 23	42,000 48
2	18,000 20	2,400 12 3	4,900 24 6	19,000 93,91 21	44,300 50
3	16,000 19	2,300 11 2	5,500 26 6	21,000 103,101 25	44,800 52
4	19,000 21	2,100 10 3	6,500 1 7	20,500 101,99 14	48,100 55
5	15,000 17	1,500 8 1	3,000 15 4	22,000 108,106 25	41,500 47
6	17,000 19	1,500 8 2	3,000 14 4	20,000 98,96 23	41,500 48
TOTAL	102,000 115	11,800 59 13	25,900 124 31	122,500 601,589 141	262,200 300

Let the Medicaid Universe for 6 months = 262,200. To select 300 samples systematically, we fix the interval = 262,200 = 874.

Please note that the total number of samples available = 899. Here subsampling is necessary to exclude 599 samples; otherwise the cost would be 599 x 3 = 1,797 man hours at a cost of $10. per hour = $17,970.

Thus, the best plan to reduce the cost of reviews can be obtained through the following allocation plan for FS and MEDICAID;

FOOD STAMPS - QC

For $j = 3, 4$

$$n_{ij} = a_{ij} \quad \text{irrespective of the relation between } f_{ij} \text{ and } a_{ij}$$

and $n_{i1} + n_{i2} = n_{i.} - n_{i3} - n_{i4}$

MEDICAID - QC (Assuming 300 Samples)

$$n_{i2} = a_{i2} - (a_{i2} - m_{i2}) \text{ if } m_{i2} \leq a_{i2}$$

$$n_{i3} = f_{i2} - (f_{i2} - m_{i3}) \text{ if } m_{i3} \leq f_{i3}$$

$$n_{i4} = a_{i4} - (a_{i4} - m_{i4}) \text{ if } a_{i4} \leq m_{i4}$$

and $n_{i1} = n_{i.} - (n_{i2} + n_{i3} + n_{i4})$

When the population is created and the strata sizes are known, it would be necessary to decide whether we should combine some of the strata or not. If a stratum population size is such that we cannot get at least one sample, there would not be any need to keep such a stratum separate.

CHANGE IN THE EXISTING MEDICAID QUALITY CONTROL SYSTEM

On February 6, 1978, the State received HCFA-AT-78-9, dated January 31, 1978. Owing to the late receipt of the AT (received only on February 6, 1978), we could not make necessary changes in the above discussions to reflect the current changes. Discussions with Mr. Allen Bazar of HCFA on February 8, 1978, lead me to believe that this AT does not have any adverse effect on the Integrated Sampling Design.

Since Colorado is a 209 b State, this AT gives us the permission to review all the 800 AFDC Samples for Medicaid also and to substitute the SSI Medicaid Samples which would ordinarily be selected from the Medicaid Strata 1 and 3 with the SSA-QA Samples. This substitution is limited to one-half of 275 non-AFDC Medicaid Samples.

Based on this new AT, let us re-write the sample constraints (please refer to page 11).

$$n_{11} + n_{12} + n_{13} + n_{14} = 800$$

$$m_{21} + m_{23} = 275$$

$$m_{31} + m_{32} + m_{33} + m_{34} = 1200$$

Rewriting this in order to bring the strata sample relationships, we would get

$$a_1 + a_2 + a_3 + a_4 = 800$$

$$b_1 + k c_{12} + k a_{23} + k a_{34} = 1200$$

$$c_1 + c_2 = 275$$

If we are given the values of k_1, k_2 and k_3, we can obtain the BAS, though none of the agencies will change the sample size.

The sample selection procedures, following the approach mentioned on pages 13-16, can be described in short, in the following order.

1. Select AFDC and Non-AFDC Medicaid Samples.

2. Select (1200-Food Stamps Samples available from AFDC and Medicaid Strata) samples from the Food Stamp only strata systematically.

Depending on the number of SSI Samples which will be selected from the Non-AFDC Medicaid segment and the cost benefit which can be derived from the substitution provision, the management can make the decision whether or not to utilize some of the provisions given to the 209 b State under the AT.

SUMMARY

In summary the advantages which can be gained through integration and unification of the three QC procedures outweigh the troubles in getting the work organized for the project and training the reviewers all the three QC programs. If HCFA and USDA give us the permission to demonstrate that the sampled population will be in no way different from the target population, we would be able to obtain greater speed to complete the reviews in time with reduced cost per review. The sampled population will consist of the first 15 days of participation or the Medicaid eligibles on the roll in the first 15 days in a month. For a State like Colorado this would mean a minimum of 54 man-weeks in a period. This gain can offset the additional reviewer requirements in the MQC, MEQC negative, and AFDC QC negative.

It is our pleasure to extent our thanks and gratitude to the officials in SSA, HCFA and USDA; without their encouragement the integration idea would have been nipped in the bud. We also extend our special thanks to the Family Assistance Studies Staff and the Project Officer who always show great interest in seeing that all the agencies are coordinated and in providing us all the help they can to eliminate all the impediments which slows the progress of the project.

STATE OF COLORADO
FOOD STAMP ISSUANCE RECORD

DRAFT

Case Number			PA/NPA Category	Social Security Number			Race/ Ethnic	Authorized Representative	
Res Cnty	Basic	Suf		- - - - - - - - -					

Name – Head of Household				Name of Spouse			
Last		First	MI	Last		First	MI

Address		City		State	Zip Code
Street, Box or Route					
				CO	

Certification Data

Date	No. of Recipients	Period of Certification	Full Allotment Coupon Denominations	Half Allotment Coupon Denominations	Initials
		From Through	$65 $50 $40 $7 $2	$65 $50 $40 $7 $2	

Record of Coupons Issued

Date	Issuing Office	Total Allotment	Cashier Initials	Remarks	Signature or "mailed"

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5. Rao, C.R., A note on a generalized inverse of a matrix with applications to problems in mathematical statistics, J. Roy. Statist. Soc., Ser.B., Vol. 24, 1962, pp.152-158.

<u>NEW YORK - INTEGRATED SAMPLE DESIGN</u>

Presented by: Charles Kavanaugh, Assistant Director
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               New York Department of Social Services

Integration of the AFDC and F/S Quality Control Samples

In order to understand the rationale for our integrated sampling plan, I
will explain how New York State administered the AFDC and Food Stamp
Programs and the problems we in Quality Control must cope with.

We have a State-supervised, county-administered system. The State is
comprised of 57 counties and New York City. There are approximately
350,000 AFDC cases and 615,000 F/S cases. Naturally our six-month
sample requirements are 1,200 positive cases in each program. New York
City is responsible for approximately 70 percent of the total caseload
in both programs. I might also mention that at the present time we do
not have a central eligibility file for any social services program. We
expect to have this capability in 1980 when our Welfare Management System
is fully developed. Presently only 20 of the 58 local districts have
computer systems, none of which are compatible. The remaining districts
maintain manual systems.

With the advent of Quality Control, the State Department of Social Services
created the Office of Audit and Quality Control with sole responsibility for
auditing all programs, local district management, and the conduct of Quality
Control programs.

In the interest of economy, three Regional Audit Offices were established.
The Metropolitan Office is responsible for reviews in New York City and
the three counties surrounding the City. The Eastern Regional Office in
Rochester is responsible for the remaining 25 counties. Originally, each
regional office assigned separate staff to each federal program. Staff is

rotated periodically within each region in order that they may become familiar with the requirements of all programs.

When the Department of Agriculture revised their sampling requirements to include all Food Stamp recipients, it seemed logical to select a proportion of AFDC to be included in both samples. This thinking was also supported by the fact that at that time New York State government was struggling with a hiring freeze and our QC staff was being depleted by promotions and transfers to other program divisions within the Department. The integration could reduce the overall staff involved in Food Stamp reviews.

Considering the problems and circumstances outlined above, we developed a sampling methodology as follows:

1. Estimate the monthly average number of cases in the F/S universe for a six-month period.

2. Estimate the monthly average number of cases in the AFDC universe that utilize Food Stamps.

3. Predetermine the number of positive F/S and AFDC cases that must be selected for review each month in order to satisfy the completion requirements of both programs (215 AFDC, 240 F/S).

4. Determine proportional sample sizes for New York City, Metropolitan Counties (Metro Region), and Eastern and Western Regions based upon the total AFDC and F/S population in each region.

5. Select one three-digit number from a table of random numbers, monthly.

6. Transmit the case number ending on form DSS-1727 to the 58 local districts requesting them to report to Central Office by the 10th of each month all AFDC and F/S cases active as of the 1st of the review month that have the designated case number ending.

7. Select the predetermined AFDC sample for each region by systematically deleting excess cases from the lists submitted by the local districts. This produces four stratified proportional samples for the AFDC program.

8. Identify all AFDC cases selected in step 7. that also appear on the F/S case lists. Select a proportional sample of these cases in each strata using the systematic deletion process.

9. Systematically select the remaining number of F/S cases needed to complete the predetermined monthly sample requirements from all other cases (HR, SSI, and NPA) reported by the local districts.

   Note: The systematic selection method, rather than the fixed interval, must be utilized to assure that each regional office has a constant workload each month. Staff limitations and an austerity budget do not permit shifting staff assignments in the instances of variations in the monthly workload. A study of a prior period indicated that at least four reviewers would have to be shifted to QC reviews sporadically within a region.

The sample design facilitates the conduct of the reviews only. Data analysis and reporting requirements are accomplished separately for each program.

Integrity of the State Case Review Process

1. All case listings are received in Central Office by the 10th of each
    month and are assigned to Regional Office staff by the 15th of the
    month. This integrated sampling process will not effect our present
    workflow.

2. Originally, Quality Control reviews were conducted by separate units
    within each regional office. Due to budget cuts the Eastern and
    Western Regional Offices began assigning cases involved in the three
    programs by geographic area to eliminate the need for more than one
    reviewer traveling to a remote area. The Metropolitan Office, due
    to the size of the workload and limited travel, continued to maintain
    separate review units for each of the three programs. Integration in
    all regions permits approximately 44 percent of the required F/S cases
    to be reviewed simultaneously with the cooperative AFDC case. Experience
    has proven that we can complete the required reviews with a 30 percent
    reduction in the F/S review staff. AFDC reviewers absorbed the additional
    workload.

    During the review process reviewers have been instructed to complete
    both the OQC 341A and the corresponding FNS 245 with the exception of
    items that are identical to both forms. This documentation is recorded
    only on the OQC 341A and cross-referenced on the FNS 245. Separate
    review schedules are completed for each category.

As with any new methodology we encountered problems related to training
review staff. In order to implement the integrated reviews it was
necessary to train AFDC review staff in the requirements of the Food Stamp

Program. As we all know, it usually takes six months before reviewers become proficient. In order to overcome the time element, we relied upon first-line supervisors who were experienced with the Food Stamp regulations to review all cases and conclusions before the cases were considered complete.

Our first administrative review by USDA after the implementation of the system resulted in severe criticism. They were concerned that all cases in the universe did not have an equal opportunity to be selected. Changes in caseloads would necessitate weighing of the QC results by region and finally the integrity of the case review was compromised because AFDC reviewers would tend to minimize the importance of the elements of eligibility unique to the Food Stamp Program.

After considering the objections outlined above, we felt justified in responding as follows:

    1. At the point the cases are assigned to a strata, all cases in
        each strata had an equal opportunity to be selected.

    2. After the influx of SSI recipients, who were formerly cashed-out,
        the statewide caseload has not varied by more than two percent.
        In the event of any major change, we would naturally re-evaluate
        our proportional samples.

    3. Regarding the integrity of the sample, we spent considerable time
        with the staff emphasizing the importance of thorough documentation
        of all elements included in the FNS 245 worksheet. This weekness
        in the review process is slowly being overcome and hopefully with

the new Food Stamp regulations the problem will be minimized. In
support of our review staff, New York State has an aggregate error
rate of over 50 percent. It wouldn't appear that the reviews have
been inadequate.

                    Presented by

                    Charles J. Kavanaugh, Asst. Director
                    Bureau of Audit Operations
                    NYS Department of Social Services

Section IV - <u>Work Shops</u>

Two separate workshops were held in order to provide statistical and program staff the opportunity to discuss issues of specific concern to them. The statistical workshop concentrated on sampling issues with special emphasis on various integrated sample designs. The case review workshop focused on the impact of integration on the case review process itself and other management related areas.

Work Group Section - #1 Sampling Techniques

Federal and State statisticians engaged in a detailed discussion of the
various problems and possible solutions to designing an integrated sample.
Although the concerns differed between State and Federal statisticians,
they agreed on the importance of QC sample integrity and savings in QC
costs. The discussion specifically considered the various integrated
sampling designs that were being used. While some States welcomed the
opportunity to integrate QC systems with complex stratified sampling
designs, other States prefer self-weighting designs.

The session considered specific sampling procedures for integrating
sample selection, with examples from West Virginia and South Dakota.
West Virginia creates strata for sampling cases in the AFDC, Medicaid,
and FS frames using a different estimated sample interval in each frame.
Thus, a weighted sample is produced without knowing the true universe
population sizes of strata. In contrast, South Dakota produces a self-
weighting sample by randomly selecting the last four digits of social
security numbers each month. Because both AFDC and FS cases have social
security numbers, representative samples occur from the same set of
random numbers. These examples indicate that integrated sampling designs
can have different objectives.

When alternative sample designs were discussed, a consensus did not emerge
on the objective for sampling. Statisticians questioned whether sampling
plans would continue to be based on fixed sample size requirements. When
each Federal QC program requires a minimum sample size with systematic

sampling, the number of State reviews and/or costs of reviews may be higher than in an integrated sample design based on other requirements. Does one minimize the number of case reviews, costs, or sample variability? Different sample designs can accomplish different objectives. Some Federal statisticians agreed that their future requirements should be more flexible but must maintain sample integrity. The common sampling goals appropriate for the three QC programs have not yet been defined. The statisticians also discussed at length whether alternatives to self-weighting samples are beneficial. Some said that they preferred self-weighting samples because of easier calculation of error rates for reports. In addition, complex statistical analyses such as multivariate statistics for error prone profiles can be used. One possible liability to self-weighting samples, however, is fluctuation of sample size by month or by geographic area. If such fluctuations are controlled, costs are often increased. Although more costly, non self-weighting samples can be made self-weighting by discarding completed QC reviews. Weighted stratification was observed to require more complex statistical calculations for reports but is generally less expensive than a self-weighted sample. These and other alternatives to self-weighting samples appear available to States if they choose providing that sample integrity is maintained.

The possibility of a model sampling plan which States could readily adopt was suggested. The approach was not preferred, however, because it would not provide flexibility in the sampling designs. It was also questioned whether Central office approval of State integrated sample plans was necessary in that it was a time delaying factor. Central office approval was justified, however, because of the lack of a uniform

distribution of statistical personnel at the various Regional levels. Central Office approval ensures uniformity and safeguards the State against implementing an unapprovable plan.

The statisticians suggested several solutions for problems in integrated sampling. A common problem to many States is the mixture of household heads between programs. Many States are unable to identify when a house-hold has an AFDC assistance unit head who differs from the Food Stamp household head. Because such households can be sampled from two frames, the probability of their selection is higher than it should be. The solution suggested was reviewing a mixed household for only one program whether it be AFDC or Food Stamp.

Because some States are unable to determine the statewide sizes of strata in integrated sampling, they have not been able to use alternatives to self-weighting samples. A solution proposed was estimation of strata weights from sampled data; this method is currently being tested in West Virginia. Because the calculation of sampling variance is more complex, the weighting procedure may affect the regression adjustment method used in determining official error rates by SSA.

Some State statisticians voiced concern that State resources could not create reports if all QC systems adopt the same time deadlines. The resource demands from MQC were also of concern.

In summary, statisticians agreed on the importance of QC sample integrity and savings in QC costs. Based upon the discussion, one can conclude that alternative sampling procedures exist for integrated sampling. States can elect procedures for self-weighting samples or more complex procedures

requiring weighting. The appropriate approach to integrated sampling will depend upon State circumstances and Federal requirements for QC sampling.

Federal and State QC program staff engaged in discussions centered around the following issues felt to have direct relevance to the case review process and operations.

1. Can integrated case reviews conducted by generic reviewers be of the same quality as separate reviews performed by specialized reviewers?

   One State with an integrated QC system felt that quality had initially suffered but that it had improved to its previous level over several review periods. Two States who currently have generic reviewers (but not integrated sample designs) expressed concern over the quality of reviews in their States and are exploring mechanisms to make improvements (it is interesting to note that in both of these States, the concern resulted from local agency challenges to QC findings). Several States were concerned that their own State policies were so complex that it would be difficult for a reviewer to learn all three Programs and still maintain a high standard of quality. One State, for example, who has integrated FS and AFDC Quality Control, felt that their State's medical assistance policy was too complicated to be integrated with FS and AFDC. Another State who has integrated all three programs felt that their simplified and integrated State policy was an asset to sample integration. This State felt that learning and applying the three different QC policies was the reviewer's most difficult task.

For the most part, however, States felt that a high level of quality can be maintained under an integrated QC system and that integration enhances reviewer interest and upgrades the job function. In fact, States with experience in integration generally felt that after some initial resistence, reviewers came to prefer the integrated approach as enhancing their jobs. States were quick to point out, however, that an emphasis must be maintained on training and reviewer standards in order to insure a quality product.

2. <u>What mechanisms are used or can be used to measure the quality of integrated case reviews</u>?

As with most States, States that have integrated their QC systems rely heavily on Federal re-review findings as an indication of the quality of their reviews. These States felt that the quality of reviews have remained high under integration and cited the lack of an increase in Federal differences as evidence supporting their contention. On the other hand, the two States with generic reviewers who previously expressed concern over the quality of reviews cited challenges from the local agencies as the mechanism which brought their reviews into question. Most States, however, felt that the Federal re-review was an adequate mechanism to measure the quality of State reviews.

3. <u>What implications does integration have for the training function</u>?

It was agreed that training became more important under integration and that more emphasis must be placed on initial as well as ongoing training. States generally agreed that adequate resources did not

exist outside the QC Unit and that except for program input, training must be performed in-house. However, States did not see the increased training demands placed on the QC Unit as a negative aspect of integration.

4. Does relating to three separate recipient populations cause inherent problems for the QC reviewer?

No. States felt strongly that recipients in each program represented a wide range of characteristics and that reviewers must be skilled in dealing with all types of people regardless of the program under review.

5. What are the advantages and disadvantages of a consolidated worksheet?

States with integrated samples were quick to point out that recording the same case information on 2 or 3 separate worksheets was a duplication of effort and a task resented by the reviewers. As a result, States felt that some type of integrated QC worksheet was necessary. In fact, several States stated that they would not consider integration unless an integrated worksheet was available.

Clearly, the primary advantage of such a worksheet is the minimization of case recording; which could result in substantial savings in time and effort. To do so the worksheet must be flexible enough to accommodate the various program requirements. At the same time, however, concern was expressed that the worksheet provide enough structure to guide the reviewer through the review and insure that each program element is thoroughly covered. It was also felt that in order to facilitate different case review completion schedules, the worksheet

must provide for reaching clearly independent QC review findings at any time during the case review. This would become particularly important in the event that AFDC-QC findings were required to be completed within 60 days after the sample month. A major disadvantage of an integrated QC worksheet would be its lack of flexibility in reflecting QC program changes. If one program makes a change in its QC system which affects the worksheet, it may be difficult to revise the worksheet without adversely effecting the other programs. This process, in that it would involve 2 or more Agencies, may be complicated and time consuming.

Although several States are experimenting with integrated worksheets, none have been field tested to date. Even though there are disadvantages to an integrated worksheet, it is believed that it is a logical companion to an integrated sample design. To this end, the Department of HEW and the Department of Agriculture have agreed to jointly explore the possibility of developing an integrated QC worksheet for State use.

6. What are the implications of integrated sample designs on the Corrective Action Process?

States were in agreement that Sample integration would have a positive effect on the CA Process. It was felt that having data available on multi-benefit cases would be an extra degree of data sophistication which could impact on such areas as error profile systems and cost benefit analyses.

7. What impact does the shift in the AFDC-QC review cycle have on sample integration?

The shift in the AFDC-QC review cycle from January-June to April-September makes it compatable with MEQC but incompatable with FS-QC. The general concensus was that all three programs must be on the same review cycle in order to coordinate sample selections, changes in the various QC programs and data processing. States expressed concern, however, that care must be taken at the Federal level to insure that case completion and reporting requirements are staggered so that unmanageable workloads do not develop.

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